



*Annual Meeting*  
*April 28–May 1—Buffalo*

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**NEW YORK  
STATE  
JOURNAL  
OF MEDICINE**

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**January 1, 1941**

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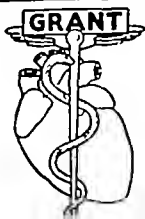
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# NEW YORK STATE JOURNAL OF MEDICINE

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*Editorial*

Acc No. 3602  
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Take It Away, Asclepius Acc 8.12.61

Most potent, grave, and reverend signors, my very noble and approved good masters, fellow physicians of the Medical Society of the State of New York, greetings In this year, 1941, in obedience to the mandate of your late House of Delegates, in a resolution introduced by the New York County delegation, your Voice ascending high over the radio will be heard in the land

In days gone by, medicine followed the advice of Horatio to Hamlet "Be thou familiar, but by no means vulgar Beware of entrance to a quarrel, but being in, give every man thy ear, but few thy voice take each man's censure, but reserve thy judgment" So look you, gentle Sirs, if quarrel there be, how it is not of our seeking, we "don't complain of Betsy or any of her acts, exceptin' when we've quarreled and told each other facts" Medicine has listened these many years Now it must speak

But with what voice? The "big manly voice, turning again toward childish treble" piping and whistling in his sound? A "distant voice in the darkness"? The voice that "sounds like a prophet's word",

and in its hollow tones are heard "The thanks of millions yet to be"? Shall it be "a monstrous little voice"? Or will we "roar you as gently as any sucking dove, we will roar you, an't were any nightingale"? For look you, Sirs, you cannot speak without a voice, be you men or angels

What then is to be done? How grapple with this problem of "microphonetics"? The tongue of medicine has always been the pen of a ready writer Now that medicine in person must step up to the microphone in its own and in the public interest it can ill afford to speak with "The watch dog's voice that bayed the whispering wind," and yet in all the days of our years no one has taught us how to speak And speak we must Plainly, without affectation, simply, but without monotony, agreeably, as one who would persuade In short, medicine must now add to its curriculum the study of comprehensible speech, the art of good English diction The JOURNAL suggests that plans for such study and practice might well be formulated for the coming year by the Council Committee on Publicity

## Third Annual Congress on Industrial Health

Arrangements have been completed for the third Annual Congress on Industrial Health, sponsored by the American Medical Association, to be held Monday

and Tuesday, January 13 and 14, 1941, at the Palmer House in Chicago

These meetings are open to all physicians and others interested in the indus-

trial health movement There is no registration fee

Industrial health is of the utmost importance to the Nation at all times, but more especially at this time when national preparedness depends so greatly on industrial production Designed to acquaint the physician and others with the rapidly expanding importance of preventive medicine and surgery, this congress should be of vital concern to all those interested in the welfare of industrial organization

"Since every man-hour of production is vital at this time, the program of the congress is intended to be as helpful as possible to physicians called on to control those factors which in the past have contributed greatly to the incidence and costs of industrial absenteeism In the field of trauma the hand and the eye have proved to be particularly vulnerable Symposiums have therefore been developed to present the best current opinion on the management of these costly forms of industrial disability Of the occupational diseases, dermatitis has long been recognized as the most troublesome A series of demonstrations has been planned to include discussion of the criteria for diagnosis of industrial cutaneous disorders as well as accepted methods for the treatment and placement of susceptible employees Among non-occupational diseases the common cold and influenza annually exact an enormous toll through loss of earning capacity and disruption of production schedules "

The question of the availability of trained personnel in industrial health is a serious one The character of the work is intermediate between private practice and public health It requires knowledge of the engineering problems and of the processes involved in the par-

ticular industry in which the worker is employed

"This problem also will be discussed from the point of view of the essential economics, the possibilities of control through air conditioning and the role of the physician in industry and in private practice Since many able-bodied men will probably be inducted into military service, industry may need to recruit workers from the physically handicapped and from the aging groups These developments, of enormous medical and social significance, will be featured at the congress Assignment of this type of worker into industry with proper consideration of physical ability and mental aptitude will be fully considered Concern has been expressed about the availability of trained personnel in industrial health, the subject of an early resolution by the Committee on Medical Preparedness of the American Medical Association A session will be devoted to determining what shortages exist and the best means for correction It is hoped that concrete proposals for better training for the industrial nurse, the industrial hygienist, the safety engineer and the physician in industry may grow out of these discussions A means will also be provided for the interchange of experience and results of recent activity by committees on industrial health in state and county medical societies

"The congress promises to provide an unusual opportunity to the medical profession to grasp a sense of its potential contribution to improved physical well-being among the employed population "

We cannot urge too strongly that all those who can arrange to do so attend the meetings of the congress For the information of all who are interested we are publishing the program on page 74

## Fitness of Drafted Men

As men are called for the draft, it is inevitable that there will be many rejected as physically disqualified For years, physicians, educators, and many

others have collaborated on a campaign urging periodic health examinations Every facility has been offered which the ingenuity of man could devise to induce

public cooperation in such a movement. To which the public response has been Nuts!—or a reasonable facsimile thereof, such as the Bronx cheer.

So what? So now physicians in the New York area reject one-third of the men applying for Army service, and an earlier analysis of Navy volunteers shows 71 per cent of rejects. So the office boy leaves on our desk daily papers with headlines, for a joke or something, and some of our socialist acquaintances start right away to yell louder for State Medicine for the lack of which, if we don't have it right away, the country is going to hell. Also, Mr W Kaempffert of the *New York Times* cries "Dear, dear, alack-a-day, all is lost save group medicine," in meticulously correct English.

So the viewers-with-alarm, the head-shakers, the fingervaggers, and the whither-are-we-drifting grifters sharpen their pencils and wet their pens and drink black coffee so they can give medicine the works. Hence it looks like a natural from the publicity angle for the State Medicine boys and the jolly scribes.

However, as the facts gradually sift in between the headlines we find that a good many of the local draft boards have been passing men who have then been turned down by the army examiners. A large number of these rejects have been found to be psychologically unfitted for combat service. This is not to any great extent a remediable defect, but it can be a costly one for the government. Men are being accepted for training for one year now, and thereafter will constitute the Army reserve for nine years. Service-connected disability contracted during those years constitutes a lien on government pensions and hospital and medical care. For this reason army standards of acceptance are being kept as high as possible, far higher than would be the case if the Nation were at war and could not be so meticulous by choice.

There is reason to believe that we are far healthier now than at the time of the last war. Tuberculosis, for instance, has declined as a cause of mortality 75 per

cent more or less in the last twenty-five years, "among men of draft ages insured in the Industrial Department of the Metropolitan Life Insurance Company.

At the draft ages the reduction in heart disease mortality has been 40 per cent for white and 60 per cent for colored men between 1911-15 and 1939.

As an indication of health conditions at ages 25 to 44 the mortality of white policy holders has decreased by two thirds—from 11.1 per 1,000 in 1911, to 3.6 in 1939. The most substantial contribution toward the reduction in the total mortality rates comes from the marked improvement in the death rate from tuberculosis. The death rates (from 1911 to 1939) per 100,000 fell from 509.0 to 61.8 for white males and from 277.1 to 40.6 for white females. The mortality from syphilis, appendicitis has fallen markedly. The death rates for the group under review, per 100,000 for organic heart disease among white males, have dropped from 61.9 in 1929 to 50.2 in 1939, for cerebral hemorrhage from 12.0 to 10.6, and for chronic nephritis from 28.6 to 15.3."

Thus, in certain respects there need be no serious concern about the present health conditions of the nation between the ages of 25 and 44. The defects for which men are being rejected by the Army examiners are those structural and psychologic weaknesses upon which the strenuous nature of field training could be expected to have a detrimental effect. The point of view of the Army and of civilian medical examiners might be expected to vary considerably concerning the acceptability of certain risks and thus to account for the high percentage of rejections. They should not be taken too seriously in our belief, even by constitutional pessimists. And, after all, what can be done for flat feet, bow legs, and perforated eardrums?

<sup>1</sup> Statistical Bulletin Metropolitan Life Insurance Co 21 No 11 (Nov) 1940

## Correspondence

HEALTH INSURANCE *VERSUS* SICKNESS INSURANCE

COLUMBIA UNIVERSITY COLLEGE OF PHYSICIANS AND SURGEONS

DE LAMAR INSTITUTE OF PUBLIC HEALTH  
600 West 168th Street, New York*To the Editor*

I hope that in the future you will not allow articles dealing with sickness insurance to appear under the deceptive and fallacious title of health insurance

Also in editorials I believe it wise and correct to use the term sickness insurance when discussing the voluntary or compulsory type

There is no such thing as health insurance offered anywhere, nor can there ever be in the nature of things

It would help to prevent the lousy kidding itself about health which is popular, front-page

stuff when they should be getting down to basic facts of insurance to meet the cost of medical care in sickness

Yours, as always,

December 5, 1940

HAVEN EMERSON, M D

[*Touché!* Since we agree thoroughly with the points made by Dr Emerson we must admit that we have fallen into the all too common error of using these terms in loose fashion. This is an instance in which precision in language is most important—*Editor*]

TREASURY DEPARTMENT BUREAU OF NARCOTICS  
NEW YORK, N Y*To All Members of the Medical Profession in New York City*

For some time there has been an acute shortage of illicit narcotic drugs available to the underworld in New York City. Numerous narcotic addicts have undergone involuntary cures because of their inability to secure drugs. In many such cases the withdrawal of drugs has not been particularly difficult for the reason that no great tolerance has been established by the use of the extremely diluted narcotics which the addict was able to obtain in the illicit traffic.

Other addicts and dealers in illicit narcotics have been resorting to the medical profession in an endeavor to secure narcotics for addiction purposes and sale. Many of these persons are skilled in simulating symptoms of illnesses for which narcotics are prescribed, some suggest to the physician that he prescribe for them an initial large supply of drugs for an "ambulatory reduction treatment" and by going from physi-

cian to physician have been able to acquire a substantial supply of drugs for the gratification of their addiction and for sale to others. Most of these addicts are of the criminal type, many of them are adept forgers and may steal the physician's prescription blanks for the purpose of forging narcotic prescriptions if these blanks are within reach in the doctor's office.

Present conditions are such that it is believed the physician is justified in using extreme caution in dealing with any stranger who might approach him in the manner described.

This circular is issued as informative and in the hope that our mutual efforts may keep at a minimum the amount of drugs available to the illicit narcotics traffic.

Very truly yours,

GARLAND WILLIAMS,  
District Supervisor

November 5, 1940

## CONFERENCES ON THERAPY

*To the Editor*

I believe that the conferences on therapy that you propose to publish from time to time will serve a very useful purpose and judging by the present one on fever it is evident that the subject is to be presented in a scientific manner and from a practical standpoint.

I write you this letter with the idea in mind that discussions of the subject should be continued by your readers in such letters as this.

My training dates back to the day when therapeutics was much stressed and it is my impression that within recent years therapy, except for a few specifics, has been relegated to a posi-

tion unworthy of its importance. I am in hopes that the publication of conferences on therapy will aid in restoring this subject to its proper place.

Regarding fever, it has been my impression that toxemia whether it be bacterial, metabolic, chemical, or thermal in nature is the direct cause of temperature response owing to its effect on the temperature center in the brain and it would seem that the resulting fever not only registers the defensive mechanism of the organism, but also the extent of the toxemia to which that organism is subjected. All means at our command should

be used in counteracting this toxemia and, among these, excessive fluids are extremely important to make up for body loss of fluid in fever as well as to dilute circulating toxins so that the effect on other organs such as the kidneys may be minimized. In bacterial diseases I have always felt that drugs (and these include quinine, acetphenetidine, salicylates, etc.) play a very important part. It has been my impression that these drugs act not only on the temperature center but rather do they have a direct effect in controlling the growth of bacteria by which the production of toxins is reduced to a minimum and nature can then rid the body of these toxins

already present. This is entirely my bedside impression of the action of these drugs and yet for practical purposes their use has stood me as well as many others in good stead.

I hope that other readers will give their ideas pro and con on this subject and that a discussion may be stimulated which will, I am sure, serve a very useful purpose.

May I congratulate you and the discussers in the conferences on the able way in which the management of fever was presented.

Yours very truly,

MONROE B. KUNSTLER, M.D.

December 5, 1940

### ERRATUM

Attention has been called to a regrettable mistake in the December 15, 1940, issue, page 1814. In the article on the Medical Expense Fund of New York, Inc., it was stated that the *New York Herald Tribune* had published an editorial entitled "Another Medical Plan." This editorial appeared not in the *New York Herald Tribune* but in the *New York Times*—Editor.

### WINTER IN ENGLAND—WHAT WILL IT BE LIKE?

Great Britain has made no secret of its fear of widespread epidemics in the cold, wintry months ahead. Crippled water supply systems, damp air-raid shelters, shattered homes, and bombed hospitals contribute to the growing menace of sickness and disease. Britain's limited store of medical and surgical equipment is being dangerously depleted.

#### Britain's Civilian Wounded Are Crying for Your Help!

The Medical and Surgical Supply Committee of America, with headquarters at 420 Lexington Avenue, New York City, composed of more than 265 physicians and surgeons in principal cities throughout the United States, is calling upon all doctors and their friends to contribute toward purchasing 1,000 emergency operating sets in khaki canvas rolls and 1,000 fitted first-aid metal cases to be shipped to Great Britain.

The price, insurance and delivery of these units to England is

1 emergency operating unit	\$200 00
1 first-aid fitted case	\$ 70 00

Each set will bear a plate with the donor's name, if desired.

PLEASE SEND YOUR CONTRIBUTIONS TODAY TO ARTHUR KUNZINGER  
TREASURER, MEDICAL AND SURGICAL SUPPLY COMMITTEE OF  
AMERICA, 420 LEXINGTON AVENUE, NEW YORK CITY

# *Suggestions for Contributors* to the NEW YORK STATE JOURNAL OF MEDICINE

The NEW YORK STATE JOURNAL OF MEDICINE asks its contributors to follow the suggestions listed below in the preparation of their articles. In this way they will greatly facilitate the expeditious publication of the JOURNAL. These suggestions have been devised in order to save correspondence, avoid return of papers for changes, minimize the work of preparation for the printer, and save the high costs of corrections made on galley proof.

**Size of Articles**—It is earnestly desired that scientific articles shall not exceed ten JOURNAL pages at the outside. Even that number of pages tends to lower reader interest. An average of five or six seems to be the most desirable from this point of view. Calculation can readily be made by multiplying the number of double spaced typewritten manuscript pages by the fraction two-fifths.

**Manuscripts**—Papers must be typewritten on one side only of white sheets consecutively numbered, and be double spaced with one-inch margins. They should be prepared with great care so as to be typographically correct. All headings, titles, subtitles, and subheadings should be typed flush with the left-hand margin.

**Titles**—The title should be *brief* and typed in capital letters. The subtitle can be longer and should be typed in cap and lower case letters. Under the title, or subtitle, if there is one, should appear the name of the author and city in which he lives.

**Subheadings**—Subheadings should be inserted by the author at appropriate intervals.

**References**—It is the unflinching practice of the NEW YORK STATE JOURNAL OF MEDICINE to use specific "references" rather than "bibliography." There should appear in the text reference numbers, typed above and to the right of the word to which there is a reference. A list, consecutively numbered, should include the following items:

- a *Books*—author's surname followed by initials, title of book, edition, location and name of publisher, year of publication, volume, and page number. Thus, Osler, W. Modern Medicine, ed 3,

Philadelphia, Lea & Febiger, 1927, vol 5, p 57

- b *Periodicals*—author's surname followed by initials, name of periodical, volume, page, month (day if necessary), year of publication. Thus, Leahy, Leon J. New York State J Med 40: 347 (Mar 1) 1940.

NOTE: The JOURNAL does not include titles of articles.

**Case Reports**—Instead of abstracts of hospital histories, authors should write these reports in a narrative style with properly completed sentences. All unimportant details should be deleted with such general negative statements as "fit the case."

**Tables**—While tables are very useful on lantern slides in the reading of papers, they fall of this purpose to a large extent in the printed page. For that reason it is urged that they be incorporated in the text.

**Illustrations**—These should be kept to the minimum necessary to make clear the points to be registered by the author. In some instances they are imperative to proper understanding, in others they are merely picturesque.

Where illustrations are to be used they should accompany manuscripts and each should always be referred to in the text, preferably by number. Drawings or graphs should not be larger than 12 × 16 inches, and must be made with jet black India ink on white paper or tracing cloth. *Do not use typewriter for lettering.* The smallest lettering on 8 × 10 inch copy should be no less than 1/4 inch high. Cross-section paper (white with black lines) may be used, but should not have more than 4 lines per inch. If finer ruled paper is used, the major division lines should be drawn in with black ink, omitting the finer divisions. In the case of finely ruled paper, only blue-lined paper can be accepted. Lettering and all markings must be large enough to be readable after reduction. Mail rolled or flat. Photographs should have clear black and white contrasts and be on glossy white paper.

Whenever possible "crop" photographs, i.e., mark portion that can be excluded when reproduced. Crop marks should be on margin of photographs—not on the photographs.

It is important to mark the top of the illustration on the back, also its number as referred to in the text, thus, Fig 1, 2, and the name and address of the author.

**Legends** should be typewritten on one sheet of paper and attached to the illustrations.

# THE MEDICAL RESERVE OFFICER OF THE UNITED STATES NAVY

COMDR ERNEST R. EATON, MC-V(S), \* USNR, New York City

*[This article is particularly timely because of the Navy's dire need of doctors (see announcement on page 66—EDITOR)]*

SEVERAL months ago the President of the United States urged Congress to act speedily in regard to the matter of compulsory military training and intimated that before long the medical profession at large would be required to meet the need of the progressively increasing number of citizens who would be called from civilian life into active military service in behalf of our country. The first peacetime compulsory military training in the history of the United States is now an accepted fact.

Because of emergency measures the United States Navy has increased from approximately 175,000 to 225,000. This increase necessitates additional commissioned medical officers. At the present time there is an opportunity for officers of the Medical Corps of the United States Naval Reserve to enter active service.

The maintenance of good health of the Navy personnel is the ultimate objective of the Medical Corps of the United States Navy. Briefly, this objective is reached by the following means:

- 1 The maintenance of a high standard of health and physical fitness of all
- 2 The care of the sick and of the wounded in battle
- 3 The dispensing of immunizing agents, especially smallpox and typhoid vaccination to the personnel
- 4 The administering of prophylactic agents
- 5 The instruction of personnel in matters of first-aid treatment, hygiene, and sanitation
- 6 The maintenance of health records of officers and men
- 7 The annual physical examination of all officers for the conservation and promotion of their health and to determine their fitness to perform all the duties of their grade at sea

- 8 The care, management, and custody of hospitals, ambulances, and medical and surgical supplies
- 9 The sanitation of ships, buildings, and grounds
- 10 The care of water supply, food, and clothing
- 11 The making of suitable recommendations to improve conditions of health of the officers, such as exercises ordered for the conservation of health. These consist of regular physical exercises taken by all officers in the open air for thirty minutes daily.

An officer of the Medical Corps of the United States Naval Reserve, when the time comes for him to be assigned to active duty, will be required to cooperate in carrying out the preceding plans, and he must fulfill his duties in regard to these plans in the same manner as would befit a medical officer of the Regular Navy. The Medical Officer of the Naval Reserve who is called to active duty must be prepared to do his work in an earnest manner, endeavoring to enter into his duties as though he had been trained from his earliest years in discipline and efficiency, doing what he is told to do, going where he is told to go, and in general following Navy customs, traditions, rules, and regulations.

An officer of the Regular Navy is not lacking in his duty to, and his understanding of, the Naval Reserve officer, and when asked for help and advice he will give assistance in a generous and courteous fashion. The Navy knows that efficiency means self-reliance and initiative and will seek to develop these important qualities in the officer of the Medical Corps of the Naval Reserve in active service. There are many sound principles in the Navy but none so deserving of such high commendation as the Navy sense of comradeship and desire to help others in their loyalty and efficiency. Especially is this true with respect to those who seek knowledge in their work from those in command.

A conspicuous and fundamental feature of our governmental policy is the maintenance of our Navy to uphold the United States in its national and international trade and to protect the territorial possessions of the United

\* Medical Corps—Volunteer Reserve (Specialist Duty)  
Organizer of the Long Island Naval Reserve Hospital,  
Unit Number 15 Third Naval District

States The defense of our coast is an important part in the preparation of naval war plans, and included in this plan is a definite service expected of officers of the Medical Corps of the Naval Reserve

The United States Naval Reserve was conceived in 1916 and reorganized in the years of 1925 and 1938 It is a constituent part of the United States Navy Naval Reserve officers are commissioned by the President to serve in the same grade and rank as officers of the Regular Navy Appointments are made in conformity with the law enacted by Congress which made the Naval Reserve a component part of the Navy, with prescribed rules and regulations administered by the Secretary of the Navy

The Bureau of Medicine and Surgery maintains a complete medical record of all the personnel of the Navy, Marine Corps, and Naval Reserve It was created by an act of Congress on August 31, 1842, maintains hospitals, supply depots, medical laboratories, dispensaries, and technical schools for the Medical, Dental, and Hospital Corps, and is charged with the administration of the Nurse Corps Furthermore, it is allied with the Red Cross and the Veteran's Bureau

The Surgeon General is the head of the Bureau of Medicine and Surgery and is appointed by our President for a term of four years The Bureau of Medicine and Surgery under the direction of the Surgeon General directly governs the Navy Medical Reserve, administering appointments, promotions, physical examinations, retirements, discharges, etc

Officers of the Medical Corps of the Naval Reserve in active duty are subject to the same laws, rules, and regulations as the officers of the Regular Navy A book of *United States Navy Regulations and Naval Instructions* is issued in accordance with the provisions of Section 1547 of the Revised Statutes of the United States for the government of all persons attached to the Naval Service This book states that all officers and other persons belonging to the Navy are directed and required to make themselves acquainted with the regulations which set forth the duty, responsibility, authority, distinctions, and relations of the various bureaus, offices, and individual officers each to the other

The task assigned to the Navy Medical Reserve Corps in war or in national emergency in peacetime is the medical and surgical care of the personnel of the Navy and Marine Corps This is comparable to the services

given in municipalities by physicians, dentists, nurses, pharmacists, and hospitals

The Navy Medical Center in Washington, D C, established by General Order No 70, dated June 20, 1935, is a unity organization that functions as a medical, diagnostic, and educational center directly under the control of the Bureau of Medicine and Surgery, with an officer of the Medical Corps of the United States Navy in command Originally the Medical Center consisted of two subordinate administrative units—namely, the United States Naval Hospital and the United States Naval Medical School The Dental School was organized as a distinct unit on April 1, 1936, under a separate subordinate command

These institutions afford to members of the medical and dental personnel of the Navy such courses of instruction as may from time to time be determined by the Bureau of Medicine and Surgery in keeping with the current needs of the service A competent staff of instructors is maintained, and officers of the Medical and Dental Corps, as well as enlisted personnel of the Hospital Corps, are ordered to duty for the purpose of attending these courses as the exigencies of the service may permit

The laboratories of the Navy Medical Center are available for members of the personnel who desire to undertake research work and for the examination of pathologic specimens Further, clinical diagnostic facilities in the Medical School are provided for use by the Medical Center and the service at large

An extensive medical library available for the Navy personnel is maintained at the Medical Center

During attendance at the school, be he officer or enlisted man, the student becomes familiar with the traditions and achievements of the Navy and is given a better understanding of the environment in which he must live and work Aviation medicine, gas warfare, and tropical medicine are taught, as well as the medical and surgical emergencies characteristic of and pertaining to Naval service Also, the newly commissioned officer is instructed in the intricacies of the paper work of the Navy, in the medical and personal equipment necessary for sea duty, and, in general, in the performing of the duties of a medical officer afloat

The Naval Reserve occupies an important place in plans for national defense, and definite duties and positions are assigned to it which it is not possible for the Regular Navy under its peacetime strength to execute or fill

The United States Naval Reserve is intended to augment the Regular Navy immediately upon the outbreak of war and, with the Regular Navy, bears the first brunt of battle with the enemy at sea

The primary aim of the Naval Reserve is to make ready beforehand a force of qualified officers and enlisted men who will be, and are, available for immediate mobilization in the event of a national emergency and who, together with the active and retired personnel of the Regular Navy, will be, and are, able to meet effectively the needs of the expanding naval establishment while an adequate flow of newly trained personnel is being established. It is a component part of the United States Navy and consists of the following: (1) the Fleet Reserve, (2) the Organized Reserve, (3) the Volunteer Reserve, and (4) the Merchant Marine Reserve

1 The purpose of the Fleet Reserve is to provide in the initial stages of mobilization an available reserve of ex-officers and ex-enlisted men of the Regular Navy who may be utilized without further training to fill those billets requiring experienced personnel

The officer personnel of the Fleet Reserve consists of both ex-commissioned and ex-warrant officers of the Regular Navy who have been discharged honorably therefrom after not less than four years of service therein and who, with their own consent, have been appointed in the Fleet Naval Reserve by the Secretary of the Navy in the permanent rank last held by them. In time of peace such officers who are kept in the Reserve receive a small salary or pay but are not obliged to perform training or drill duty during that period. These commissioned officers include both medical and dental officers, designated, respectively, MC-F and DC-F

2 The desired object of the Organized Reserve is to provide a trained force of officers and men which, added to the qualified personnel from other sources, will be adequate in numbers and composition to complete the war organization of the United States Fleet. This class of the Naval Reserve consists of officers and men who are required to perform annual training and other duties and who shall be available for immediate mobilization. The officer personnel includes medical officers, both commissioned and warrant (including pharmacists) and are designated MC-O

3 The purpose of the Volunteer Reserve is to prepare a force of qualified workers and men in such numbers that if added to the officers and men in other branches of the Re-

serve they will be adequate to fulfill the intent of the Naval Reserve. It is composed of those members of the Naval Reserve not assigned to the Fleet Reserve, the Organized Reserve, or the Merchant Marine Reserve, who are qualified or partially qualified for prescribed mobilization duties. In addition to commissioned and warrant officers and enlisted men, the Volunteer Reserve includes aviation cadets, midshipmen, and nurses

The officers of the medical personnel may be summarized briefly as follows: (a) Medical officers, commissioned and warrant (including pharmacists), qualified for general duties afloat or ashore—designated MC-V(G) (b) Medical officers qualified for specialists duties—designated MC-V(S) (c) Commissioned dental officers qualified for general detail afloat or ashore—designated DC-V(G) (d) Commissioned dental officers qualified for specialists duties—designated DC-V(S)

Each Naval District has a quota of Medical Specialists Units composed of medical and dental officers of the Volunteer Reserve. These units are intended to provide groups of qualified medical and dental officers in time of war or of national emergency. These units may be assigned to hospital ships, station ships, or base hospitals as the staff thereof or to augment the staff of the Regular Navy

Each Medical Specialists Unit is composed of eight medical officers and one dental officer of the Specialist Reserve group. In addition and at such time as these units are called into active service, six nurses of the Naval Reserve Nurse Corps are assigned to each unit in which their services are desired

A Medical Reserve Specialists Unit is composed of the following specialists, one of whom serves as the "organizer" of the Unit: (a) surgeon, (b) ophtho-mo-otolaryngologist, (c) urologist, (d) psychiatrist, (e) internist, (f) roentgenologist, (g) clinical pathologist, (h) orthopedist, and (i) prosthodontist

In each unit "alternates" for the various specialists are set apart in accordance with the quota limit in each district. "Alternates" is the term given in a Medical Specialist Unit for younger men who are qualified in the various specialties but who are not called for active service with the units unless circumstances prevent the principals from serving. However, in time of national emergency, provided their services are not required with the units, "alternates" may be transferred to mobilization stations as unassigned medical specialists

In addition to the specialists units as designated above, Laboratory Research Units may, in time of war or national emergency, be allotted to hospital ships, base hospitals, or other medical department activities to prosecute laboratory research work as required. Each unit is made up of medical officers of the specialists class and twelve pharmacist's mates, Class V6, who are qualified laboratory research workers.

The Naval Reserve Nurse Corps is a part of the Volunteer Reserve and is composed of graduate, unmarried, female nurses, having registry in one or more states. The applicants must be citizens of the United States or its insular possessions, and by an acceptance of an appointment in the Naval Reserve they obligate themselves to serve the Navy in wartime or when a national peacetime emergency exists. If required to do so, they must serve throughout the war or until the national emergency ceases to exist.

4. The ultimate object of the Merchant Marine Reserve is to provide officers and men for service on merchant vessels and to provide officers directly connected with the operation and managements of such vessels when commissioned in the Navy. So far as practicable such officers and men will be assigned to duty in their own vessels.

The Merchant Marine Reserve is composed of those members of the Naval Reserve who follow, or who for three years followed, the sea as an occupation or those who are employed in connection with the seafaring profession. The commissioned personnel includes medical officers who are designated MC-M.

To retain his commission in the service and to advance in rank in his corps, it is essential that a medical officer of the Naval Reserve exhibit such active interest as may be possible under the circumstances. Whenever an opportunity offers itself—when appropriations are available or at his own discretion without pay—he should take training duty and attend lectures and conferences and prepare papers on specific subjects. Study assignments should be promptly completed.

The Navy provides certain courses of instruction for Naval Reserve officers. In the case of officers of the Organized and Volunteer Reserve, enrollment in these study courses is obligatory, the minimum requirement being a correspondence course in Navy Regulations. In addition to the correspondence courses in professional subjects the Naval War College conducts a special course in strategy and tactics for Naval Reserve officers. A reading

course also is provided by the Bureau of Navigation.

Candidates for appointment as medical officers in the Naval Reserve must be citizens of the United States and must be over 21 years of age. Medical officers in the classes MC-O, MC-V(G), and MC-V(S) may be appointed upon presentation of satisfactory credentials as set forth below, which may be accepted in lieu of a professional examination.

- (a) Letters or certificates from three or more persons of good repute testifying from personal knowledge to good habits and moral character of the candidate.
- (b) Certificate of medical education. This certificate must be from a Grade A school, give the date of graduation of the candidate, and be signed by the dean or registrar.
- (c) Certificate from the president or secretary of a state or local medical society to the effect that the applicant is a member in good standing.
- (d) Certificate of license to practice medicine.
- (e) Certificate from the proper hospital official indicating type and duration of internship.
- (f) If the candidate has had hospital service or special educational or professional advantages, certificates to this effect, signed by the proper authorities, should be forwarded.

In addition to the foregoing conditions of entrance into the MC-V(S) class, evidence of qualification in his specialty must be presented by the candidate.

The limiting border of ages for original appointments in the Naval Reserve are as follows:

	Organ- ized Reserve	Volun- teer General	Volun- teer Special (Mini- mum)	Mer- chant Marine
Commander			45	30-64
Lieut. Com- mander			37	27-52
Lieut.			31	24-50
Lieut. (J G)	21-32	21-32	25	21-44
Ensign	21-28	21-28	21	
Ensign (Prob- ational)		21-26		

The grade and rank in which candidates for class MC-V(S) are appointed is determined by the candidate's age, professional standing, and academic seniority. These must be appropriated to the duties of the mobilization assignment. After entrance into the Navy

service, the officer is automatically promoted to the next higher grade, providing he demonstrates an honest and earnest interest in the service to which he is attached and maintains a clear record as to naval offenses.

The pay of officers of the Naval Reserve on active duty is identical with that of the Regular Navy officers of equal rank and length of service. In addition to the base pay certain allowances are granted to officers not occupying government quarters and also to those officers who have dependents. The annual combined pay and allowances range from a minimum of \$2,199 for a newly appointed Ensign to a maximum of \$7,200 for a Captain, the highest rank attained in the Medical Corps of the Naval Reserve. The lowest grade in which a medical officer is appointed is that of Lieutenant (junior grade), with pay and allowances of \$3,158 per annum if married and not occupying government quarters. In addition to the preceding pay and allowances the Naval Reserve officers are granted a cash clothing allowance when first reporting for active duty.

The applicant must be proved to be physically qualified to perform the duties of his rank at sea and on shore by passing a complete and thorough physical examination. The standard of physical examination for Medical Reserve officers is the same as for officers of the Regular Navy. These standards exclude all pathologic conditions that would interfere with the performance of the duty required in the service or those that, as a result of service, may be especially liable to undergo progressive change or to become the basis of a claim against the government in the event of the officer being called in active service. Among these are (a) feeble constitution, general poor physique, or impaired general health, (b) any disease or deformity, either congenital or acquired, that would impair efficiency of the body or any of its organs or parts, and (c) any acute disease will be sufficient cause for rejection of an applicant.

Standards of physical examination are Eyes—12/20 in each eye unaided by lenses and capable of correction by lenses to 20/20, color—the applicant shall be required to read all plates in the color vision test book, hearing—15/15 whispered voice and 40/40 watch, height—minimum 66 inches, maximum 76 inches, weight—minimum 132 pounds (more than 15 per cent above the prescribed weight disqualifies an applicant), chest—minimum expansion of 2½ inches, and teeth—minimum of 20 vital, serviceable, permanent teeth of

which there shall be four opposing molars, two of which shall be on each side of the median line, and four directly opposed incisors.

In certain branches the physical examination is followed by a written one. After the applicants are passed, names are listed in the order of the examination marks received. Thus is determined the order of seniority. As already intimated, in the case of the MC-V(S), a written professional examination may be waived in lieu of the establishment of professional qualifications of the applicant, which qualifications are essential and are required by law to be submitted. Upon acceptance of a commission in the Medical Corps of the United States Naval Reserve, an officer agrees that in time of war and in a national peacetime emergency he will serve his country. Our President has declared that this present period of our history is a national peacetime emergency.

Information for persons desiring appointment as officers or for enlistment in the Medical Corps of the United States Naval Reserve is published in a circular by the Bureau of Medicine and Surgery, Navy Department. The titles and addresses of the commandants of the various Naval Districts to whom application may be made are as follows:

Commandant, 1st Naval District, Navy Yard, Boston (States of Maine, Massachusetts, New Hampshire, Vermont, and Rhode Island, including Block Island.)

Commandant, 3rd Naval District, 90 Church Street, New York City (States of New York, Connecticut, and upper New Jersey, including counties of Mercer, Monmouth, and all counties north thereof, also Nantucket Shoals Lightship.)

Commandant, 4th Naval District, Navy Yard, Philadelphia (States of Pennsylvania, southern part of New Jersey, including counties of Burlington, Ocean, and all counties south thereof, Delaware, including Winter Quarter Shoal Light Vessel.)

Commandant, 5th Naval District, Naval Operating Base, Norfolk, Va. (States of Maryland, Virginia, West Virginia, and the counties of Currituck, Camden, Pasquotank, Gates, Perquimans, Chowan, and Dare in North Carolina, also the Diamond Shoal Lightship.)

Commandant, 6th Naval District, Navy Yard, Charleston, S. C. (States of South Carolina, Georgia, and North Carolina, except the counties of Curri-

tuck, Camden, Pasquotank, Gates, Perquimans, Chowan, and Dare )

Commandant, 7th Naval District, Navy Yard, Charleston, S C (States of Florida, counties of east of Apalachicola River, Alabama, Tennessee, Louisiana, Mississippi, Arkansas, Oklahoma, and Texas )

Commandant, 8th Naval District, Navy Yard, Charleston, S C (States of Florida, counties west of Apalachicola River, Alabama, Tennessee, Louisiana, Mississippi, Arkansas, Oklahoma, and Texas )

Commandant, 9th Naval District, Naval Training Station, Great Lakes, Ill (States of Ohio, Michigan, Kentucky, Indiana, Illinois, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas )

Commandant, 11th Naval District, Naval Station, San Diego, Cal (States of New Mexico, Arizona, southern part of California, including counties of Santa Barbara, Ventura, Los Angeles, and San Bernardino, and all counties south thereof )

Commandant, 12th Naval District, San Francisco (States of Colorado, Utah, Nevada, northern part of California, including counties of San Luis Obispo, Kern, Inyo, and all counties north thereof )

Commandant, 13th Naval District, 553 Federal Building, Seattle (States of Washington, Oregon, Idaho, Montana, Wyoming, and Territory of Alaska )

Commandant, Navy Yard, Washington, D C (Washington, D C )

Whether the duty be that of Medical Officer afloat or ashore, the following instructions prepared by the present Senior Medical Officer of the Third Naval District will be of value in giving a general outline of the procedure to be followed by officers reporting for duty. The list covers most of the points to be considered when reporting on board a large-type vessel. The list would be condensed and some points omitted when reporting on board a destroyer or a similar vessel.

- 1 When reporting on board in civilian clothes, have uniform, sword, and gloves in luggage with you
- 2 Report to the Officer-of-the-Deck. Give him a copy of your official orders for record in the ship's log
- 3 Obtain your stateroom assignment. The First Lieutenant of the ship usually is in charge of assigning officers'

rooms. Normally, the Officer-of-the-Deck will either obtain this information for you or have his messenger escort you to the First Lieutenant's office

- 4 Change into uniform
  - 5 Report to the Executive Office with your orders. The Executive Officer will give you brief instructions covering your duty on that vessel and usually will give you instructions in regard to time and uniform for calling on Captain
  - 6 Turn in your orders to the Ship's Secretary in the Captain's office for endorsement
  - 7 Report to Senior Medical Officer
  - 8 Stow clothes and outfit (or have mess attendant stow) in stateroom
  - 9 Obtain combination of your room safe from First Lieutenant. Reset combination
  - 10 Obtain linen for bed and blankets from First Lieutenant
  - 11 Pay mess entrance fee and mess bill to Wardroom Mess Treasurer
  - 12 Purchase a share in Cigar Mess from Cigar Mess Treasurer (optional)
  - 13 Draw *Ship Organization Book*, *Ship's Battle Organization Book*, and any other ship's instructions from Ship's Secretary. Stow same in stateroom safe
  - 14 Learn your station and duties for general quarters, fire quarters, abandon ship, quarters for master, collision quarters, fire and rescue, and other emergency exercises for which bills have been prepared on that ship
  - 15 Learn ship's daily and weekly routine
  - 16 When your orders are returned to you by Ship's Secretary after having been endorsed by the Captain, take them to the Disbursing Officer with Transfer Pay Account in order to be taken up on the payrolls of that vessel. If first reporting for active duty, you will not have a transfer pay account, and it will be necessary for the Commanding Officer to write an order to the Disbursing Officer directing the latter to take you up on the payrolls
  - 17 Furnish Disbursing Office with original orders and required numbers of copies for payment of travel allowance
- The preceding observations are not to be construed as official or reflecting the views of the Navy Department or the Naval Service at large. Divested so far as possible of techni-

calities, principal points of information have been emphasized in the hope that if the reader does not find the information too disconnected

he may be helped in better understanding the Medical Officer of the United States Naval Reserve  
53 West 83rd Street

### OSLER WAS AN OBSTINATE MAN

So declared Dr. Joseph McFarland, who spoke on "Osler as I Knew Him" at the dedication of the Osler Memorial Building at the Philadelphia General Hospital, "Old Blockley," on June 8. "Osler at Old Blockley," Dean Cornwell's oil painting depicting a scene during the beloved physician's career while at Philadelphia General Hospital, was given its first public showing at the dedication. The painting was also shown, together with "Beaumont and St. Martin," Cornwell's earlier medical painting, at the American Medical Association meeting in New York. "Osler at Old Blockley" is the second in the series, "Pioneers of American Medicine," which is being produced by John Wyeth & Brother, Inc., of Philadelphia, to dramatize the contributions of Americans to the advancement of medicine.

The old "Post House" in which Osler performed many autopsies during his Blockley years had been unused for twenty years. A committee of Blockley graduates decided to restore it to its original state and maintain it as the first American memorial to the famous Dr. William Osler. A grant from John Wyeth & Brother, Inc., enabled its completion.

More than a thousand physicians gathered on the grounds of Philadelphia General Hospital for the dedication.

Osler was not only obstinate, recalls Dr. McFarland, as reported in the *Medical Record*, but his views were 'frequently brought out with the added force of irony and sarcasm.'

"For example, I remember one of his bedside talks. All of his teaching was at the bedside, the bed being wheeled into the lecture room before the whole class of students in the University Hospital, or a group of students going into the ward with him in the Blockley Hospital. This lecture was on cirrhosis of the liver. We had an advanced case with ascites and also marked circulatory obstruction, and after all phases of the disease had been dwelled upon and the treatment reached, he turned to one of the students and said, 'Now, what shall we do for this man?' The student, remembering the instruction received in other departments, unhesitatingly responded, 'Administer potassium iodide to absorb the connective tissue of his liver.' Assuming an erect and somewhat belligerent attitude and emphasizing each word with an extended forefinger, Osler said, 'You might as well administer iodide of potassium to absorb a lead pencil in the man's vest pocket as to absorb the connective tissue in his liver.'

These words I have never forgotten, though I do not remember what, if any, treatment was prescribed. He probably recommended no medication of any kind. Indeed that was his usual method. Keep the patient in bed, carefully regulate his diet, keep his bowels comfortably

moving, were apt to be his only recommendations. This led to the charge that he was a therapeutic nihilist, that he only studied his patients and did not treat them, and brought upon his head the execration of those members of the class who had begun to study medicine through pharmacy and working in drugstores, serving as drug clerks, all of whom knew a large number of elegant formulas, of much greater advantage to the pharmacist than to the patient, and who came into the profession because they believed that practice consisted of the administration of drugs.

"It was difficult to understand some of Osler's attitudes, especially toward the cardiac cases. In all of the other clinics, and by almost every other one of our teachers, every case of cardiac disease was immediately given digitalis. Osler pronounced it digitalis and used it very sparingly. His remedy for most cases was rest in bed, careful diet, and tincture of cardamom compositus. He was accustomed to say, 'What this heart needs is rest and food. It doesn't want to be whipped up and driven to further exhaustion.' And in regard to the cardamom he said, 'It is pleasing in appearance, has a pleasant odor, a distinctive aromatic taste, is readily accepted by the patient and does neither harm nor good. Give it until you find out what else it may be desirable to do.'

'He was also insistent upon not treating the patient until you knew what ailed him. This principle was once carried so far that it almost brought about his expulsion from Blockley. It was in 1880, only five years before, that Laveran discovered the plasmodium of malaria, and I suppose that its announcement in this country was received with the same widespread skepticism as the tubercle bacillus. During my whole course in medicine I never saw anyone who looked for it in the blood as a curiosity or sought for it for the purpose of making a diagnosis of malarial fever. Let me add in passing that at the time of which I speak the microscope was scarcely used in clinical medicine except for the examination of urinary sediments. But Osler took his microscope into the hospital wards and searched the blood of all fever patients for malarial parasites, or whatever else he might find, giving them no quinine when no parasites were found, continuing to examine the blood from day to day, often delaying the administration of the specific until he had studied all phases of the cycle of parasitic development.

'The Guardians of the Poor considered it an unpardonable neglect of the sick poor and arranged to let Dr. Osler know that if he continued such careless practice he would be requested to yield his position to someone else. He, however, continued in much the same way, he was an obstinate man.'

# ENTEROPATHY IN DEFICIENCY STATES

DAVID ADLERSBERG, M D , and MICHAEL WEINGARTEN, M D , New York City

IT HAS long been known that nutritional deficiency produces functional and organic changes in the gastrointestinal tract. The clinical picture of a deficiency state is frequently the result of deficiency of more than one factor. For instance, cases of beriberi often present symptoms of scurvy and pellagra. In pellagra and in beriberi, fatty stools, so characteristic of sprue, may be observed. A person affected with pellagra may show scorbutic symptoms as well as evidences of vitamin A deficiency.

While the fully developed clinical pictures of avitaminosis involving the gastrointestinal tract (sprue and pellagra) are relatively infrequent in this part of the country, there can be little doubt that milder, subclinical forms occur with great frequency. Yet relatively little emphasis has been placed on the recognition of these subclinical deficiencies, especially insofar as they manifest themselves through gastrointestinal symptoms. This is probably due to the lack of definite criteria for the diagnosis of these conditions. The recognition of subclinical scurvy has been greatly aided by the availability of a quantitative chemical determination of vitamin C in the blood and urine. Unfortunately, there are no simple laboratory procedures available at present for the determination of the various components of the vitamin B complex in the body. Here the recognition of a subclinical deficiency has to be based solely on the clinical analogy to the classic deficiency states with prominent gastrointestinal symptoms.

It is our belief that many patients who do not present the well-defined pictures of sprue and pellagra are, nevertheless, suffering from milder forms of nutritional deficiency. This belief is based on the similarity of symptoms and of roentgenologic findings, particularly in the small intestine, and the therapeutic response to the same agents that favorably influence the course of sprue and pellagra. The study of this problem has led us to believe that it is the explanation for many obscure and frequently undiagnosed gastrointestinal conditions. We have found signs of deficiency in patients whose gastrointestinal tract was

injured by mechanical, chemical, or infectious agents that impaired absorption or as a result of improper nutrition per se. Prolonged dietary insufficiency, alcoholic excess, the roughage fad, and irrational reducing diets are among the producing causes. Impaired gastric function with achylia, or after gastric resection or gastroenterostomy, and organic disease of the stomach or colon (notably ulcerative colitis<sup>1</sup>) are predisposing factors. It will be recalled that the factors enumerated, when intensified and prolonged in their action, may produce the picture of "secondary pellagra."

In the advanced case of sprue and in well-developed pellagra, the intestinal symptoms are very similar: diarrhea, distention, flatulence, borborygmi, and vague abdominal pains. In pellagra, spruelike stools have been described, and we have observed microscopic evidence of impaired fat digestion in our cases. The advanced case of sprue is characterized by a marked steatorrhea, but it must be remembered that some milder cases of sprue with otherwise typical manifestations of the disease may have no anemia or diarrhea, and, during a remission, they may even be constipated, may have formed stools, and may show only microscopic evidence of impaired fat digestion (Miller and Barker<sup>2</sup>).

The cases of mild nutritional deficiency which we have observed have at no time during their course shown the fully developed picture of sprue or pellagra. It is difficult, therefore, to classify them with either of these entities, although it may be possible to consider some of them at least as a "forme fruste" of one of these diseases. Most of the cases, however, do not lend themselves to even such a designation and must, in the present state of our knowledge, be considered cases of "nutritional deficiency involving the gastrointestinal tract."

## Clinical Picture

The chief complaints are a feeling of heaviness and distention in the abdomen with a marked increase in gas formation, borborygmi with "splashing, gurgling noises" in the abdomen, belching, and flatulence. There is a sense of abdominal unrest and pain which varies in intensity from mild to cramplike sensations, which are usually localized in the

Presented in part at a joint meeting of the Section on Gastroenterology and Proctology and of the Section on Radiology of the A.M.A., St. Louis, May 19, 1939.

From the Gastrointestinal Service (Dr. H. A. Rafsky) of Beth Israel Hospital.

umbilical region Nausea may occur a few hours after meals, and poor appetite is frequent Constipation is often present, but the bowel movements may be regular with either formed or semiformal stools However, diarrhea may occur, especially when the fat and roughage intake are excessive Glossitis may be present Denudation of the epithelial lining, superficial ulcerations, varying degrees of swelling of the tongue, and disturbance of taste are found Fissures and scaling of the corners of the mouth (cheilosis) may also be found Neuritis of the peripheral type, as well as other signs of deficiency, may be associated

It often happens that these patients have for years been regarded as neurotics or that they have been treated for peptic ulcer, gastritis, chronic appendicitis, or "spastic colitis" Nevertheless, this form of deficiency may be associated with gastritis, peptic ulcer, gallbladder disease, and the various forms of colitis

The stools (formed, semiformal, or loose) contain large amounts of fatty acids and soaps In evaluating this, it is important that the total daily intake of fat is not excessive (about 80 Gm), because, if large amounts of fat are taken even by a normal individual, there will be a certain amount of unabsorbed fat in the stool Also, it is necessary to rule out the presence of pancreatic disease In the latter case the stools are characteristically more bulky, and the fat is chiefly in the form of unsplit, neutral fat

### Roentgenologic Findings

On roentgenologic examination, gastric atony is a frequent finding Hypermotility, but more often hypomotility, of the small intestine may be observed In either case there is an irregular, smudged filling of the coils, and deep spasms and peristaltic contractions may be observed, both fluoroscopically and roentgenographically Instead of the smooth, continuous filling normally observed, isolated coils are found, and there are variations in the contours and caliber of the intestinal segments Dilated as well as narrow loops are seen Occasionally, a loop may be so markedly dilated as to simulate the colon in appearance The mucosal pattern is thickened in the narrowed loops and shows disappearance of the markings in the dilated loops Such changes have been described in cases of sprue by Pillai and Murthi,<sup>3</sup> and Snell and Camp,<sup>4</sup> and in pellagra by Weber and Kirklin.<sup>5</sup> Mackie and Pound<sup>1</sup> have found them in



Fig 1 Pellagra, white male, aged 24. Mental changes, typical dermatitis, diarrhea Small intestine four hours after barium meal dilated, narrowed, segmented and isolated loops Hypersecretion and gas

a series of cases of ulcerative colitis and have related them to the deficiency state

It is necessary to exclude the effect of drugs before interpreting the small intestinal picture For example, a saline laxative may produce changes in the appearance and increase the normal motility On the other hand, morphine produces delayed motility and gas in the small intestine for twenty-four hours and sometimes as long as five days (Pendergrass<sup>6</sup>)

Two factors are apparently concerned in the disturbance of motility observed (1) the irritation of the intestinal mucosa tending to cause hypermotility and (2) the alteration of the neuromuscular control which tends to produce hypomotility and hypomotility of the entire gastrointestinal tract The resultant of these two factors determines the final motility of the small intestine, so that we may have cases of hypermotility, hypomotility, and even normal motility associated with very definite signs of small intestinal involvement It should also be remembered that the gastric and colonic motility may influence the emptying of the small bowel Atony and dilatation of the colon with large amounts of gas may be observed

The changes in pattern and motility of the small intestine found in deficiency states may also be present in inflammatory, granulomatous or neoplastic lesions, and in steatorrhea of pancreatic origin They are by no means specific Nevertheless, they form an important part of the syndrome of deficiency as it affects the gastrointestinal tract and are of special value as a diagnostic lead in milder states of deficiency (see figures)



FIG 2

FIG 2 Deficiency syndrome with nutritional enteropathy, restricted diet for many years, sciatic neuritis, occasional diarrhea, large amounts of fatty soaps and acids in stool. Small intestine two hours after barium meal patchy filling of jejunum, segmented, dilated, narrowed loops



FIG 3

FIG 3 Deficiency syndrome with nutritional enteropathy, restricted diet due to gallbladder disease and "nervous indigestion", flatulence, distention, vague perumbilical pains, glossitis, neuritis. Small intestine three and one-half hours after barium meal patchy filling, irregular contours, segmented loops

## Discussion

A consideration of the possible cause of the changes found in the subclinical deficiencies may well begin with a discussion of the observations made in sprue and pellagra.

*Pathology of the Gastrointestinal Tract in Deficiency States*—It is now universally accepted that pellagra and sprue are primarily due to nutritional deficiency. The pathologic changes in the gastrointestinal tract in both diseases show striking similarities. Glossitis is a common feature.

In pellagra, MacNeal<sup>7</sup> has described "an inflammation throughout the intestine, patchy in distribution. Strips of hyperaemic intestine several feet in length alternated with strips fairly normal in appearance." Vascular engorgement, hyperplasia of lymphoid tissue, edema, and infiltration of the mucosa with wandering cells were seen. Loss of superficial epithelium was extensive, ulceration commonly occurred in the lower ileum, caput coli, and rectum. Lynch,<sup>8</sup> describing similar changes, asserts that "the state of the intestine described is the outstanding structural change in pellagra. It constitutes thus far the only visible characteristic evidence of the disease, except the dermatitis, at post-mortem examination."

In sprue, Faber<sup>9</sup> and Manson-Bahr<sup>10</sup> held that the essential pathologic change is an in-

flammation of the intestinal wall especially involving the small intestine. Faber was able to show the presence of diffuse and sometimes ulcerative enterocolitis in sprue. His findings were confirmed by Manson-Bahr, who states that "evidence is accumulating that the essential primary lesion of sprue is an ulceration of the small intestine chiefly affecting the lower end of the ileum." The findings in a typical case were catarrhal changes in the duodenum and hyperemia and ulceration of the lower jejunum and ileum. Microscopically, there was atrophy of the villi due to fibrosis, diffuse round cell infiltration of the whole mucosa, and general fibrosis of the submucosa. Justi,<sup>11</sup> Fischer and von Hecker,<sup>12</sup> and Reed<sup>13</sup> report similar findings in cases of sprue.

On the other hand, Thaysen<sup>14</sup> is an exponent of the view that the intestinal changes observed in sprue are variable and that sprue may persist for a great number of years without organic findings. He, as well as Macke and Fairley,<sup>15</sup> interprets the intestinal wall changes found in some cases as being of a secondary nature, either produced by invasion of microorganisms of low virulence or by an irritation of the mucous membrane by the abnormal intestinal contents. More recent examinations of cases of nontropical sprue by Rosenthal<sup>16</sup> and Luksch and Sachs<sup>17</sup> showed definite chronic inflammatory changes

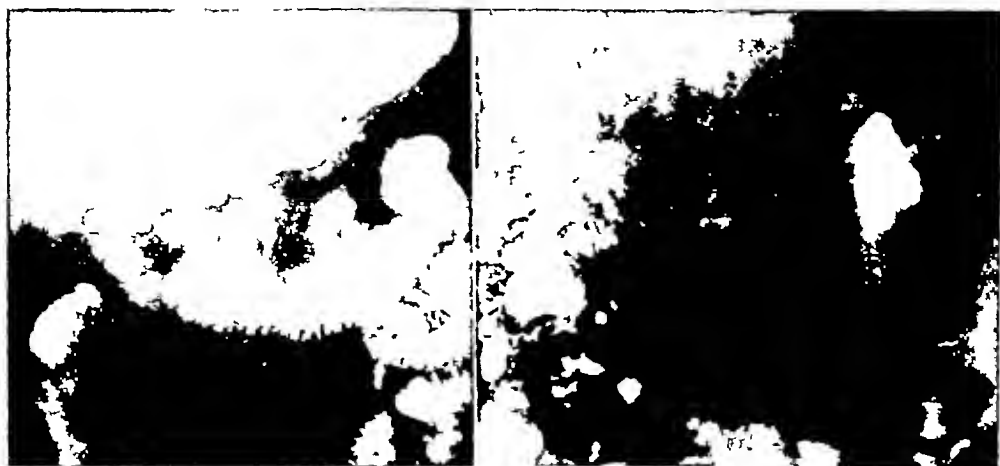


FIG 4. Nutritional enteropathy following gastric resection for duodenal ulcer, restricted diet due to residual pain, bloating, distention, flatulence, achlorhydria, no marginal ulcer. Small intestine immediate film, overloading of jejunum, dilated loops, two and one-half hours after barium meal patchy filling, isolated coils, irregular contours

of the small intestine and cecum, with ulcerations and scar formations

In an experimental study on monkeys fed on autoclaved food, polished rice, and onions, McCarrison<sup>18</sup> found congestive, necrotic, and inflammatory changes in the mucous membrane, sometimes involving the entire gastrointestinal tract, sometimes limited to areas of it, degenerative changes in the neuromuscular apparatus, resulting in dilatation of the stomach, ballooning of areas of small and large bowel, degenerative changes in the secretory elements, hemorrhagic infiltration, and atrophy of the lymphoid elements. Despite the importance of these observations, we have been unable to find any confirmation or denial of them.

*Role of Vitamins*—Consideration of the pathologic changes in sprue and pellagra, as well as in the experimentally induced deficiency states, may lead to the conclusion that the structural integrity and normal function of the gastrointestinal tract are dependent upon an adequate supply of vitamins. The vitamin B complex seems to be of particular importance but a normal supply of other vitamins is necessary. Vitamin A deficiency produces keratinization of epithelial structures with increased susceptibility to infection. This has been observed especially in the lacrimal glands, the bronchial tree, the renal pelvis, and also in the gastrointestinal tract. There are some experimental observations of changes in the gastrointestinal tract in vitamin A deficiency in animals.<sup>19</sup> However,

there is no conclusive evidence of such changes in man in a pure vitamin A deficiency. Vitamin B<sub>2</sub> deficiency has been shown to produce hypotonicity and diminished motor activity of the entire gastrointestinal tract, possibly through its effect on the neuromuscular apparatus. The most striking clinical gastrointestinal symptom is anorexia. Deficiency of nicotinic acid is associated with pellagra and secondary pellagra. The improvement of the gastrointestinal symptoms of sprue upon the administration of liver extract rich in vitamin B<sub>2</sub>, as well as the beneficial effect of liver extract and nicotinic acid on the diarrhea of pellagra, is well established. Certainly all the factors of the vitamin B complex are not known at present. A recent study indicates that an unknown nutritional factor, tentatively called "vitamin M," is necessary to prevent pellagra in monkeys in addition to nicotinic acid, riboflavin, and thiamin, and other known components of the vitamin B complex (Langston, Darby, Shukers, and Day<sup>20</sup>). The nature and functions of the various components of the vitamin B complex are still in the process of evaluation. Recently, attention has been called to choline as a possible component of the vitamin B complex.

As to vitamin C, Einhauser<sup>21</sup> found that it is stored in the walls of the small intestine and that in patients with gastrointestinal catarrh the utilization of this vitamin is impaired. It has been found easier to produce tuberculous infection of the small intestine in animals de-

prived of vitamin C than in the non-scorbutic controls (Greene, Steiner, and Kramer<sup>23</sup>)

The steatorrhea and the negative calcium balance found in tropical and nontropical sprue and in celiac disease have been related to vitamin D deficiency. However, this apparent vitamin D deficiency may be secondary to a failure of absorption of fats and fat-soluble vitamins as a result of vitamin B<sub>2</sub> deficiency. The important role of vitamin B<sub>2</sub> in fat absorption has been emphasized by Verzar,<sup>22</sup> based on the work of Mottram, Cramer, and Drew<sup>24</sup> and Cramer and Ludford,<sup>25</sup> who demonstrated the abnormal histologic picture of fat absorption in animals suffering from lack of vitamin B<sub>2</sub>. However, this work has not been confirmed as yet.

*Pathogenesis*—Two modes of pathogenesis have to be considered in cases of deficiency involving the gastrointestinal tract.

1. A group of patients may show at first no symptoms of deficiency because the vitamin supply has been adequate. An irritation of the wall may result from mechanical, chemical, or infectious injuries to the gastrointestinal tract, and this may cause gastrointestinal dysfunction. Involvement of the small intestine results in an impairment of absorption of fats, carbohydrates, proteins, and vitamins supplied with the food. When the inflammatory process causes hypermotility of the small intestine, this factor in itself may impair the absorption to a great extent, since the absorptive capacity of the colon is very limited. In cases with a normal or delayed small intestinal motility, physicochemical changes due to the inflammatory process may, in themselves, alter the complicated mechanism of absorption of nutritional elements as well as of vitamins. The secondary deficiency thus produced diminishes the resistance of the tissues to further injury, giving rise to a vicious circle: primary irritation—secondary deficiency—further irritation (secondary to deficiency).

2. In another group of patients nutritional deficiency presents itself at the outset. Here we find those who have for a long time taken unbalanced modifications of various diets (e.g., Sippy, low residue, gallbladder, and colitis diets), persons suffering from alcoholism whose vitamin and food supply have been diminished by the caloric value of the consumed alcohol, and otherwise normal individuals who, due to misinformation or poor economic conditions, have failed to consume foods that are essential for an adequate vitamin supply. Here, a special role might be attributed to the vitamin B complex, the lack

of which may cause a disturbance in absorption of other vitamins, thus producing the picture of a polyavitaminosis with diminished resistance to infection and other noxious factors. The superimposed inflammation of the intestinal wall in this group is secondary to a primary nutritional deficiency and results from bacterial infection and irritation by abnormal intestinal contents. The vicious circle in this group presents itself as primary deficiency—secondary inflammation—further deficiency (secondary to inflammation).

Although the sequence of etiologic factors is different, the result is the same, and the final clinical and roentgenologic picture of both groups is that of a chronic enteropathy.

The concept of the relation of gastrointestinal disorders to nutritional deficiency presented here resembles a recent development in another field of medicine. The discovery that many forms of polyneuritis were related to vitamin B<sub>1</sub> deficiency led to the work of Weiss and Wilkins,<sup>26</sup> who demonstrated the not infrequent occurrence in this country of "beri-beri heart" in association with various forms of neuritis. Similarly, we find that changes in the small intestine resembling those found in both sprue and pellagra appear in association with other symptoms of nutritional deficiency in many patients with gastrointestinal symptoms.

In a previous publication we have referred to the small intestinal changes in deficiency as being due to a "chronic enteritis."<sup>27</sup> The use of the term *enteritis* in this connection appeared to us to be as justified as the use of the terms "glossitis" and "neuritis" to describe the lingual and neural changes found in association with deficiency. However, similar changes in the small intestine have been found in various types of steatorrhea. In view of this fact, of the controversy as to the actual changes in the intestinal wall in sprue and pellagra, and of the complete absence of anatomic examinations of the intestine in the milder deficiency states, we consider the term "chronic enteropathy" to be more appropriate. Whether the changes observed by us in the milder subclinical deficiency states are functional or organic in origin, they constitute a recognizable clinical and roentgenologic entity to which the term "chronic enteropathy" may be applied until further study permits a more exact evaluation of the basic pathology.

*Therapy*—The therapy of intestinal symptoms in deficiency states must attempt to break the vicious circle by attacking it at its

two poles inflammation and deficiency. It consists in the use of measures intended to alleviate the irritation of the intestinal wall and to supply an adequate amount of vitamins. The diet used is a high vitamin, high protein, low residue diet. In a group of cases, addition of lecithin to the diet exerted a favorable influence on food absorption (particularly fat, possibly vitamins) and on intestinal motility. Soy bean lecithin in amounts of 10 to 20 Gm daily was given. Whether this effect is caused solely by improved absorption or by the action of choline (in the lecithin) is under study.

Mild astringents, such as colloidal aluminum hydroxide preparations or bismuth subgallate, may be used. Liver extract and vitamin B<sub>1</sub> (thiamin chloride) should be given, preferably parenterally, because of the disturbed absorption. It is necessary to give large doses and for a long time. Treatment must not be discontinued even after the symptoms have improved, as there is a marked tendency to recurrence. Nicotinic acid and riboflavin have also been found to be useful in combination with liver extract and thiamin chloride.

## Summary

Emphasis has been placed upon the recognition of subclinical deficiency states, especially insofar as they manifest themselves through gastrointestinal symptoms, thus resembling mild cases of sprue and pellagra.

Evidence of a chronic enteropathy as presented above should call attention to the possible existence of a deficiency state in the same way that a neuritis may furnish a clue

to the existence of a latent or incompletely evolved beriberi.

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## THANKS TO A DOCTOR

By ELIZABETH WILLCOX KIDWELL

It seems a very little thing  
That still my child can sing,  
That earth's small voices speak to her  
The robin's call, the muted churr  
Of locust through the meadow haze,  
That yet her blithe and restless toes  
Scorn the reluctant ground,  
And still before me goes  
Her wit's bright flame lighting the round  
Of the slow wheeling days

It seems a very trifling thing  
In a great world distraught,  
And yet in ancient times a healer taught  
That a child twice given  
Is proof of heaven

## DOCTOR'S WIFE HAS HER OWN TEN COMMANDMENTS

She must not know the meaning of the word "jealous"

She must never gossip

She must run a cafeteria, serving meals at all hours for her husband

She must be—like Caesar's wife—above reproach

She must have self-reliance and self-control

She must be able to think quickly and sanely in emergencies

She must be a diplomat, see all, hear all, say a lot, yet say nothing

She must learn to bear, stoically and without complaint, disappointments in her personal plans

She must be a good mother and father, because doctors are often too busy to discipline their own children.

She must be a good "doctor" because doctors never take time to doctor themselves

—Author Unknown, *Wichita Medical Bulletin*

# THE CLINICAL FACTORS OF THE VITAMIN B CONTENT\*

MORRIS L. DRAZIN, M D, Jackson Heights, Long Island, New York

**"VITAMIN B"** which at one time was thought to be a single vitamin is now known as a highly complex substance<sup>1</sup>. At present a number of its constituents have been identified. However, it is fair to assume that further research will split the remaining portions into more fractions. The diagram (Fig. 1) illustrates the composition of the vitamin B complex.

There are two main divisions of the vitamin B complex, thermostable and thermolabile.

## Thermostable

Chick dermatitis factor identified in 1935 (pantothenic acid)

Antigray hair factor identified in 1938

B<sub>1</sub>, pigeon weight and rat growth factor

B<sub>6</sub>, rat dermatitis factor isolated and identified in 1938 (pyridoxin)

B<sub>2</sub> (G), riboflavin identified in 1933 and synthesized in 1935

Nicotinic acid, antiblacktongue and pellagra factor identified in 1911, rediscovered in 1937

Unknown factors

Thermolabile

B<sub>3</sub>, pigeon weight and antigizzard erosion factor identified in 1928

B<sub>4</sub>, rat antiparalysis factor identified in 1929

Factor W, growth factor identified in 1936

B<sub>12</sub>, thiamin chloride isolated in 1926, synthesized in 1936

Lecture given before the Section of Internal Medicine and Pathology of the Queens County Medical Society on March 7, 1939

From the Medical Service and Nutrition Clinic of the Queens General Hospital. Dr. A. Victor, director.

\* Since this paper was submitted for publication a number of reports have appeared in the literature indicating that vitamin B<sub>3</sub> is of importance in human nutrition.

Spies, Bean and Ashe [Note on the Use of Vitamin B<sub>3</sub> in Human Nutrition J. A. M. A. 112: 23 (June 10) 1939] described a syndrome characterized by extreme nervousness, insomnia, irritability, abdominal pain, weakness and difficulty in walking. This disappeared on injecting 50 mg. of vitamin B<sub>3</sub> intravenously.

Antopol and Sebatland [The Use of Vitamin B<sub>3</sub> in Pseudobypertrophic Muscular Dystrophy J. A. M. A. 114: 12 (Mar. 23) 1940] report favorable results from the use of vitamin B<sub>3</sub> in pseudobypertrophic muscular dystrophy.

Jolliffe [quoted by Spies, T. D., Hightower, D. P. and Hubbard, L. N. Some Recent Advances in Vitamin Therapy J. A. M. A. 115: 4 (July 27) 1940] employed vitamin B<sub>3</sub> in certain cases of paralysis agitans. These reports are very promising and suggest that vitamin B<sub>3</sub> is a clinically useful substance.

## Riboflavin

The first of the substances to be isolated was riboflavin. It was recovered from milk in the form of pure crystals. In 1935 its formula was established and its synthesis was accomplished. Riboflavin prevents cataract formation in rats and promotes their growth. It also prevents dermatitis in turkeys. There is evidence that it forms the coenzyme of a yellow respiratory enzyme that functions as a dehydrogenase. The exact clinical function of riboflavin is not known. However, in December, 1938, Sebrell and Butler<sup>2</sup> reported that riboflavin is important in human nutrition. Vilter, Vilter, and Spies<sup>3</sup> reported that 4 cases of pellagra, whom they kept on a pellagra-producing diet supplemented by nicotinic acid and thiamin chloride, began to lose weight and developed a dermatitis, but the administration of small doses of riboflavin resulted in well-being and in the improvement of the cutaneous lesions. Jolliffe<sup>4</sup> feels that riboflavin deficiency may account for the sudden death of certain beriberi patients. Sydenstricker, Geeshin, Templeton, and Weaver<sup>5</sup> confirmed the work of Sebrell and Butler and described 5 human cases of riboflavin deficiency. These patients showed a dermatitis at the corners of the mouth (or cheilosis) and an atypical dermatitis of the hands. These authors administered, parenterally, doses as high as 60 mg. of riboflavin daily. However, further work will be needed to determine the exact role of riboflavin in human nutrition.

## Nicotinic Acid

Nicotinic acid was isolated from rice polishings and yeast in 1911 by Funk during his studies on beriberi. However, when he found it did not cure beriberi, he paid no further attention to it. Elvehjem,<sup>6</sup> during his studies on blacktongue in dogs, isolated nicotinic acid from liver extract and found that it was useful in curing pellagra. Nicotinic acid derives its name from the fact that one way of preparing it is by oxidation of nicotine. However, nicotinic acid is not poisonous and is to be considered a vitamin.<sup>7</sup>

**Occurrence in Foods**—There is evidence that nicotinic acid is present in a number of foods chiefly, liver, yeast, and lean meat.

The amounts are small—yeast contains 0.018 per cent

**Physiologic Significance**—There is evidence that nicotinic acid is a constituent of the respiratory enzyme cozymase. Vilter, Vilter, and Spies<sup>3</sup> found that in the blood of persons suffering from pellagra cozymase is present in insufficient quantities to support the growth of the *Bacillus influenzae*. The blood of normal individuals and of pellagra patients receiving nicotinic acid or its amide has the ability to support the growth of *B. influenzae*, but nicotinic acid as such, when added to a transplant of *B. influenzae*, will not support its growth. Hence, these authors conclude that nicotinic acid is utilized in the human body as a component of an enzyme group.

**Clinical Use**—Nicotinic acid is used both for the prevention of pellagra as well as the treatment for it. Fouts<sup>8</sup> also Spies<sup>9,10</sup> report the use of nicotinic acid in doses from 100 to 1,000 mg for the prevention and treatment of pellagra. They found the substance effective in a large group of persons with pellagra. They point out that nicotinic acid will relieve only symptoms due to the deficiency of nicotinic acid alone. Polyneuritis or the other deficiency states that complicate pellagra require additional supplements to the diet. Spies<sup>9,10,11</sup> and also Schmidt and Sydenstricker<sup>12</sup> assert that nicotinic acid alone cannot be expected to cure pellagra permanently, but a 4,000-calorie high vitamin and high protein diet is necessary for the maintenance of the cure. Nicotinic acid may be employed in any case of suspected pellagra. Stomatitis and glossitis<sup>13,14</sup> are indications for the use of nicotinic acid. It should be given after food in doses of 100 mg every two hours to tolerance. It is soluble, can be taken in water or any other liquid, and can be injected parenterally. The symptoms of intolerance are flushing of the skin, nausea, and occasional vomiting.<sup>15</sup> Thus far, no serious toxic symptoms have been encountered. The flushing of the skin is temporary. Individuals vary in their tolerance of nicotinic acid. However, it is best to give large doses up to 1,000 mg in divided doses on the first day and then give as much of the drug as the patient will tolerate on the second day. The dose is reduced to a maintenance level, the guide being the tolerance of the patient. The author administered 500 mg to patients for several weeks without untoward symptoms.

A few interesting observations were made during the work with nicotinic acid (1)

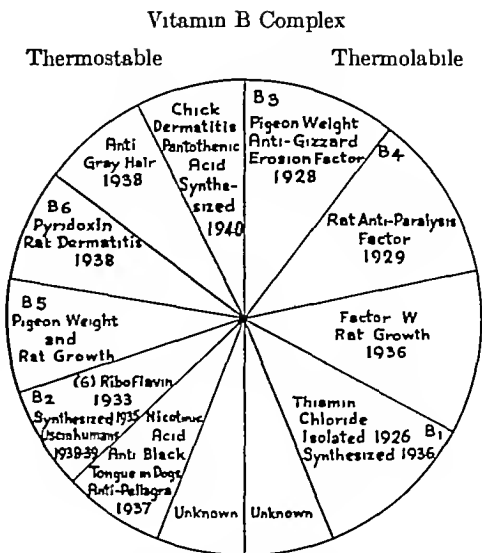


Fig 1 Diagram Illustrating Constituents of the Vitamin B Complex.

The patient receiving it develops a sense of well-being (2) The sensorium clears (3) The dermatitis lightens (4) The stomatitis and glossitis disappear (5) The appetite improves (6) The desire for smoking in heavy smokers seems to be lessened (7) The response of a patient to nicotinic acid may be of prognostic significance, for cases where nicotinic acid is of transient or no effect as a rule do not recover

### Thiamin Chloride

Thiamin chloride or vitamin B<sub>1</sub> was isolated by Jansen and Donath in 1926. R. R. Williams in 1936 synthesized the vitamin. It is a crystalline powder, is soluble in water, and has a yeasty taste.

**Occurrence in Foods**—Thiamin chloride is present in most animal and plant tissues.<sup>1</sup> For the most part it is contained in minute quantities about 1/2,000,000. On the whole, this vitamin is present in submarginal quantities "so that nature has a struggle to make and maintain adequate supplies of the vitamin to keep life moving forward at an optimal pace."<sup>1</sup> The best food sources of thiamin chloride are the whole seeds of plants and cereals, yeast, and certain animal tissues such as pork, liver, heart, and kidney. A well-balanced daily diet contains about 1 mg of thiamin chloride.<sup>16</sup> However, most American diets fall below the above figure in thiamin content.<sup>17</sup>

**Physiologic Significance**—Thiamin chloride

is essential for the metabolism of all cells. It is intimately connected with the carbohydrate metabolism. Thiamin chloride is a constituent of several enzyme systems concerned with the oxidation of carbohydrate metabolites, such as pyruvic and lactic acids, etc., to carbon dioxide and water.<sup>1,18</sup> There is evidence that there is an accumulation of pyruvic acid and related substances when a thiamin chloride deficiency exists.<sup>19</sup> The more physiologically active a cell is, the more need it has for thiamin chloride.<sup>1</sup> This may explain why a deficiency of thiamin so profoundly affects the tissues of the nervous and circulatory systems. Thiamin is stored in the tissues especially in liver, kidney, heart, and brain. On deficient diets the amounts stored decline rapidly at first, but the last minimal amounts are retained quite persistently.<sup>1</sup> The brain conserves its supply even at the expense of other tissues.<sup>1</sup>

**Clinical Uses of Thiamin Chloride**—Williams and Spies<sup>1</sup> state that thiamin is not a specific substance for any one disease but is nevertheless of help in numerous affections. This they explain by the universality of the need of thiamin chloride on the part of all the tissues. The classic use of thiamin chloride is in beriberi. It is effective in the dry or polyneuritic form, as well as the wet or circulatory form where edema is the predominating factor. Polyneuritis in any form is probably an indication for the use of thiamin chloride. Jolliffe and his coworkers<sup>20,21</sup> proved that alcoholic polyneuritis is similar to beriberi as it occurs in the Orient and that it responds to treatment with thiamin chloride. Thiamin chloride may be administered orally, subcutaneously, intramuscularly, and intravenously. Williams and Spies have given 500 mg daily for a month to normal people without ill effects.<sup>1</sup> The author has employed doses as high as 100 mg intravenously for a week without ill effects. There is a wide range between the therapeutic and toxic dose, so that for ordinary purposes thiamin chloride can be regarded as nontoxic. Recently, however, herpes zoster<sup>22</sup> was reported as a complication following the administration of thiamin chloride.

When definite clinical manifestations such as polyneuritis exist, it is the consensus among the workers in this field that the doses should be high. Injections of less than 20 mg daily are probably inadequate to produce a prompt result, and doses much higher than this may be needed. When the patient is very ill or when there is any doubt about the ab-

sorptive capacity of the gastrointestinal tract, the vitamin must be administered parenterally. Intravenous injections are apparently harmless and are quite efficacious. Since there are at present no simple clinical tests to judge the sufficiency of thiamin chloride therapy, one must guide himself by the clinical results and gauge the dosage accordingly.

When should thiamin chloride be employed? Aside from beriberi when the indication is clear, thiamin chloride may be employed to advantage in any condition where a dietary deficiency exists, in cases with heightened metabolism such as fever, hyperthyroidism, pneumonia, etc. Diabetes offers a fruitful experimental field for the employment of thiamin chloride. If in a routine examination the patient exhibits such signs as marked muscle tenderness, especially calf tenderness, plantar hyperalgesia with hyperactive, or absent deep reflexes, thiamin chloride may be of use. There is no clinical contraindication to its use. There is, however, an important drawback to its indiscriminate employment—it is expensive. Therefore, thiamin chloride should be used judiciously so as to conserve the patient's resources but unhesitatingly and in sufficient amounts when indicated.

Thiamin chloride will not help any other deficiency state. Hence, the patient must be searched for evidences of deficiencies of other nutrients, and, if present, these should be treated. Again diet is the mainstay in treating thiamin chloride deficiency as it is in the therapy of any deficiency state. The following cases are cited as illustrations.

### Case Reports

**Case 1**—C. R., white man, aged 60, was operated on for a hypertrophied prostate. He was discharged with an abdominal sinus through which urine came out. When he left the hospital, he lived in a furnished room, and then for some time he was homeless so that he was compelled to sleep in the park. When he was readmitted to the hospital, about a month after he left, he appeared chronically ill. He was mentally depressed and retarded and somewhat disoriented. He ate poorly. His tongue was dry. The skin of the dorsum of the hands to above the wrists was bilaterally and symmetrically excoriated, thickened, and reddened. The diagnosis of pellagra complicating a persisting urinary sinus was made. He was given 500 mg of nicotinic acid and a 4,000-calorie, high protein diet. Within forty-eight hours he became rational and cheerful. His appetite improved so that he consumed all the food given to him. The skin gradually cleared and he was discharged at the end of two months. His urinary sinus still persisted, but his weight increased from 131 to

143½ pounds His mentality was lucid, and his skin was normal

*Case 2*—M Q, white man, aged 43, was admitted to the hospital with a history of rheumatic heart disease of sixteen years' duration. He had been in bed for 1½ years prior to admission to the hospital He had been treated at home with digitalis, mercupurin, and intravenous glucose He had received considerable amounts of pantopon, and he was sensitive to morphine His wife related that during his illness he received about 1,000 hypodermic injections of one kind or another He hardly consumed any food at home There was no alcoholic history On admission he appeared very ill He was entirely disoriented and had visual and temporal hallucinations, delusions, and confabulations There was edema of the feet and legs and a right hydrothorax was present The heart was enlarged Mitral stenosis, mitral insufficiency, aortic stenosis, and aortic insufficiency were present A bilateral peripheral neuritis involving the lower extremities with a bilateral foot drop was noted The knee and ankle jerks were absent and there was marked muscle tenderness The diagnosis was rheumatic heart disease complicated by a thiamin chloride deficiency Fifty milligrams of thiamin chloride was given the first day, intravenously Within twenty-four hours he was mentally clear and the edema of the legs and feet was much less This dose was continued for five days Twenty-five milligrams was given for two days and 10 mg was given for about ten days, and then this dose was reduced to 5 mg daily He improved considerably, the edema disappeared, the sensorium cleared, the hydrothorax lessened some, and he ate better and became stronger The foot drop also improved to such an extent that for the first time in 1½ years he was permitted to leave the bed He even stood on his feet About one week before his death he developed a sudden toothache of such severity that one of the interns had to administer morphine to him Shortly thereafter, he became drowsy, developed heart failure, coughed up some rusty material, and died after several days Postmortem showed an enlarged heart, an old lung infarct, and mitral and aortic disease

This case is mentioned here because of the temporary response of the patient to thiamin chloride despite the gravity of the underlying illness

*Case 3*—J G, white man, aged 23, was admitted to the hospital because of an extensive tuberculosis for which a thoracoplasty was done in two stages When first seen at the hospital, he was extremely emaciated The tongue and buccal mucous membrane presented an extensive grayish white patch, slough with intervening areas of deep red Because of this he was practically unable to swallow anything, since swallowing was very painful There was considerable muscular atrophy The muscles were also

tender There was marked plantar hyperesthesia, and he was very irritable The thoracoplasty wound was open and discharging and he had a bed sore on his back The sputum was positive for *Bacillus tuberculosis* The following doses of nicotinic acid were given on successive days 1,000, 800, 600, 300, 400, 200, 100, 100, 50, and 50 mg The latter dose was continued for two weeks and then stopped because he developed symptoms of intolerance About two weeks later the nicotinic acid was resumed in 50-mg doses and was given daily for almost two months On the second day, twenty-four hours after the administration of nicotinic acid, there was an improvement The patient was now able to take orange juice and other fluid nourishment, and within a few days he was able to take solid food The mouth lesions disappeared after a period In addition to nicotinic acid he received two doses of thiamin chloride, 25 mg intramuscularly and 75 mg by mouth Then Brewer's yeast was given for eight days in doses of ½ to 2 ounces, but the patient refused to take the yeast He was also given at least 1 pint of citrus juices daily and 30 drops of percomorph oil daily A high protein and high vitamin diet was given His average intake of calories was from 2,000 to 3,200 a day After a stormy course of several months, he became ambulatory, gained fifteen pounds in weight, and was well enough to be discharged to a tuberculosis hospital.

### Summary

Vitamin B is a generic term that includes a number of constituents Nicotinic acid,\* thiamin chloride,\* riboflavin,\* and probably pyridoxin are of importance in human nutrition

Nicotinic acid, thiamin chloride, and riboflavin are components of enzyme systems that are of great importance in tissue metabolism Consequently, a deficiency of these substances produces profound changes in the living organism

Nicotinic acid and thiamin chloride and probably riboflavin when used in indicated cases and in proper doses are therapeutically effective and important substances

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## STORED BLOOD FOR TRANSFUSION

From the Emergency Blood Transfusion Service of Edinburgh and southeast Scotland C P Stewart reports in the *Edinburgh Medical Journal* studies on the use of stored blood in 427 transfusions. He points out, as summarized in a London letter to the *JAMA*, that for certain purposes the therapeutic value of blood must steadily decrease during storage. Thus the disappearance of leukocytes, reported by several observers, means that blood should not have been more than two days in storage if one of the objects for which it is used is to supply leukocytes.

But if the object is to supply fluid and oxygen carrying power there seems no reason, on the basis of laboratory examinations of stored blood, why it should not be used after as much as thirty days of storage. However, clinical trial is essential and it is extremely difficult to judge the relative value of stored and fresh blood. In surgical cases the therapeutic results appear to be independent of the age of the blood. But in such conditions as leukemia, various types of anemia, septicemia, and toxemia, blood is now used which has been in storage as short a time as possible, and the results have greatly improved.

All the transfusions in this series were done with blood which had been withdrawn into 3.8 per cent sodium citrate solution with a final concentration of 0.38 per cent citrate, stored at a temperature of from 2 to 5 C. In most cases it had been filtered after being stored for forty-eight hours.

In the 427 cases there were 58 reactions, of which 9 were fatal, 16 were only febrile, 7 were transient jaundice, and 26 were rigors. The total percentage of reactions was 13.6, which in the 259 cases of the series of transfusions done in the present year was reduced to 10.4 with only one death. This reduction of incidence of reactions

coincided with the use of blood of lower average "age."

The deaths appeared to be due to acute cardiac failure following injection of fluid and not to any factors which could be attributed to the use of stored blood, though some followed a transfusion reaction (rigor). One writer, V H Riddell, states in his book on blood transfusion that deaths from circulatory failure after transfusion with fresh blood are much commoner than is generally supposed, although they are rarely reported.

Stewart investigated the relation between the incidence of reactions and the time of storage by classifying the cases into five-day periods. Under twenty-four hours the percentage was 12.5, from one to five days 14, from six to ten days 5.2, from eleven to fifteen days 15.6, from sixteen to twenty days 22, from twenty-one to twenty-five days 15, and from twenty-five to thirty days 26.

When the cases were further analyzed according to the storage time in days from none to fourteen, it was found that blood stored from four to ten days was safer than blood stored for a shorter time or even than fresh blood. The reason for this was not clear, but it might be related to the disappearance of leukocytes during the first few days of storage. The increased reaction incidence after the tenth day may be associated with the disruption of erythrocytes.

It appears that stored blood is no more likely to produce reactions during the first fortnight than is fresh blood. But after that period the likelihood of reaction is increased. Therefore, while it is possible to use in cases of emergency blood stored longer than a fortnight, it seems better in ordinary cases to regard this period as the maximum.

## MISSISSIPPI VALLEY MEDICAL SOCIETY 1941 ESSAY CONTEST

The Mississippi Valley Medical Society offers annually a cash prize of \$100, a gold medal, and a certificate of award for the best unpublished essay on any subject of general medical interest (including medical economics) and practical value to the general practitioner of medicine. Certificates of merit may also be granted to the physicians whose essays are rated second and third best. Contestants must be members of the American Medical Association who are residents of the United States. The winner will be invited to present his contribution before the next annual meeting of the Mississippi Valley Medical Society at Cedar Rapids, Iowa, October 1, 2, 3,

1941, the Society reserving the exclusive right to first publish the essay in its official publication—the *Mississippi Valley Medical Journal* (incorporating the *Radiologic Review*). All contributions shall not exceed 5,000 words, be typewritten in English in manuscript form, submitted in five copies, and must be received not later than May 1, 1941. The winning essay of the 1940 contest appears in the January, 1941, issue of the *Mississippi Valley Medical Journal* (Quincy, Ill.) Further details may be secured from

HAROLD SWANBERG, M D, Secretary  
Mississippi Valley Medical Society  
209-224 W C U Building, Quincy, Ill

# DACRYOCYSTITIS OF THE NEWBORN

HARRY V. JUDGE, M.D., Albany, New York

**A**PERUSAL of the textbooks dealing with ophthalmology reveals that the subject we are considering is listed under the heading "congenital dacryocystitis." With such a terminology we are to assume that a child so affected was born with an inflammation of the lacrimal sac. Our knowledge of the subject contradicts this assumption.

The primary pathology which gives rise to the condition is embryologic in origin. It is due to an incomplete or delayed canalization of the nasolacrimal duct. Associated with these defects may be the presence of a collection of cells at the lower end of the lacrimal canal which have become separated from the walls of the canal during their later stages of development and have come to lie at the lower end of the duct, either just within or without the opening of the canal. In the former situation they are probably being held back by the presence of a small band of tissue in an imperforate opening in the nasal mucosa where canalization was incomplete, or in the latter situation, having been extruded from the patent duct, they have come to lodge about its opening. The presence of these cells may act further as a contributing factor to obstruction of the canal by producing a turgescence of the nasal mucosa in their immediate neighborhood, thus further impeding normal drainage through the canal. It is to the latter factor that reference will be made again when another method of treatment will be suggested for the relief of this condition.

According to Zentmayer,<sup>1,2</sup> other etiologic factors are considered (1) faulty development of the cartilages, (2) partial occlusion by pressure from the inferior turbinate, and (3) stenosis from pressure exerted on the bones of the face during instrumental labor.

Irgshimer is the author of the statement that many of these cases are due to hereditary syphilis.

In view of the numerous permanent cures which are reported as a result of spontaneous opening or other relief measures, the incidence of these more commonly unaccepted causes must be relatively small.

It is difficult or impossible at the start to know with which factor we are dealing. It is only with a progressive series of diagnostic and therapeutic procedures that we are able

then to assume with which type we have been confronted. This approach will be described.

From the clinical point of view two types may be assumed to occur.

(1) Simple represented by a low-grade infection of the sac. Some of these are believed to be cured spontaneously when the mechanical obstruction at the lower end of the duct is relieved by nature itself. In this same class may be considered those cases that are relieved rather promptly by expression of the sac supplemented by irrigation and the installation of an antiseptic.

(2) This is a more difficult group that fails to respond to the usual simpler approaches and that ordinarily responds promptly to the introduction of a probe. These must be considered cases of imperforate openings. With the mechanical factor more evident in this group and with patency of the duct not established, complications are more likely—the development of an acute dacryocystitis or a transition of the case into one of chronic dacryocystitis.

Attention is first drawn to the eyes several days after birth when a small amount of lacrimation will be observed. There may be a small collection of tears in the lacus lacrimalis as the lids are separated. Not infrequently we observe a small amount of mucopurulent material matting the cilia together. There is a conspicuous absence of any inflammatory signs of the bulbar or palpebral conjunctiva. In the majority of cases these signs are so slight that a diagnosis of the real condition might be overlooked unless, as a routine procedure in the examination of the catarrhal eye of the newborn, pressure be made over the lacrimal sac. In cases in which regurgitation is not elicited at the first examination, it is wise to repeat it. In other cases there are slight inflammatory signs of the bulbar and palpebral conjunctiva, and in some there is observed an acute inflammation of the sac with redness and swelling of the region. The natural tendency of the conjunctival sac is to drain toward the puncta and frequently leads to the collection of purulent material at the inner canthus of the eye, and, unless this is removed prior to the time pressure is made over the sac, it may be difficult to observe whether the pus had been regurgitated from the puncta or had collected at the inner canthus over the plica. The task is enhanced

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by the smallness of the structures, lids, and puncta, and the act of manipulating them into proper position to show eversion of these parts is sometimes trying

To facilitate one's observation, the use of the Berger loupe is urged. The head of the child should be steadied by an assistant. A wooden applicator is wound with a small amount of cotton so arranged that a small bulbous end is developed. After the eyelids have been wiped dry with a small amount of cotton, they are separated by means of the thumb and index finger of the left hand so as to expose each punctum. At this point pressure is made over the sac in the region corresponding to the internal palpebral ligament, and regurgitation through the puncta is looked for.

One will be greatly surprised at the wide variance in the amount of material that will be expressed. In some cases it will be extremely scant, just a drop or two, while in others a surprisingly large amount will be recovered. It is in this latter group that Creigler described his forceful expression of the sac. In the earliest days the secretion is of a clear, watery, or mucoid character, but after a short interval, when secondarily infected, the secretion takes on a mucopurulent or purulent character. It is then that we may see cases presenting a slight or a moderate degree of conjunctivitis or a slight swelling or erythema of the skin in the region of the lacrimal sac. It is the latter group, unless relieved, that may lead to the unusual complication of lacrimal abscess. Bilateral involvement may occur but is not common.

Differential diagnosis is limited to three other conditions

(1) Silver nitrate reaction. This is usually accompanied by an active reaction of the bulbar and palpebral conjunctiva as expressed by slight or moderate congestion. The stained secretions are negative for gonococci, and the signs usually disappear in several days.

(2) Gonorrheal infection. Here the prompt swelling of the lids is marked with a profuse, creamy, purulent discharge and the finding of the organisms in the smear.

(3) Inclusion blennorrhoea. This is a mild inflammation of the eye of the newborn, appearing several days after birth, accompanied by only slight swelling of the lids. The presence of inclusion bodies may be detected with a Giemsa or Wright stain of the secretion.

The above conditions are likely to be bilat-

eral and regurgitation of the sac contents is absent in all.

It must be recalled that many of these cases will cure themselves without any treatment. Such is the experience recorded by obstetricians. These indicate a spontaneous opening of the lacrimal canals or the clearance of epithelial debris from the nose through the act of sneezing or aspiration.

In the approach of the other group of cases the following procedure is recommended.

When the presence of dacryocystitis is established, a small nasal applicator is wound tightly with a minimum of cotton—just enough to cover the metal probe. This is advanced along the floor of the nose on the affected side, and in the act of withdrawal it is made to hug under the lower surface of the inferior turbinate bone. One will frequently be surprised to find on withdrawal of the applicator a collection of mucus, epithelial cells, and debris. The mass may be soft or somewhat inspissated. It is frequently accompanied by a sticky, tenacious secretion. If one is fortunate enough to meet such findings, no further treatment is applied, and the mother is directed to return with the infant on the following day. If this offending debris had been the causative agent for the improper drainage through the canal, one may be agreeably surprised to find the sac dry on the following day, and, if not entirely dry, only the slightest amount of mucous material may still be expressed. If the latter is present, it is assumed that the failure of immediate response is due to the presence of a turgescence of the mucous membrane, on the incidence of its disappearance the drainage is established, and on the second or third day no regurgitation will be apparent.

In the literature reviewed I have seen no reference to such an approach in dealing with dacryocystitis of the newborn. A somewhat analogous procedure was noted by Zentmayer<sup>1</sup> in which he remarks "A successful method, not recommended by any writer, was witnessed by Capez, according to Van Duyse (Ann Soc de Med de Gaud, 1892, LXXI, Pages 11 to 19). This author saw a lachrymal tumor rapidly cured by the nurse applying mouth suction to the nose of the infant." In lieu of such a procedure, it must be assumed that such a cure was effective in a case where epithelial cells and debris were the offending agents. An imperforate canal could not be opened by such a procedure.

The second approach, expression, can be carried out by one of two methods. In the

first, repeated expressions of the lacrimal sac are made several times a day, followed by boric acid irrigations and the installation of an antiseptic. A 1 per cent aqueous ethylhydrocuprein hydrochloride solution has afforded excellent results.

Creigler has described a method for expressing the contents of the lacrimal sac downward in an effort to open the nasolacrimal duct by hydrostatic pressure. Occasionally this happens unintentionally in the act of examining the sac for regurgitation. Creigler's method is described in his own words:

#### "Method of Procedure"

"1 The tear sac is allowed to become fully distended. We caution the mother not to wipe the eye or in any way to press on the sac before coming to the clinic or office. She is given a 25 per cent solution of protargin mild (argyrol) or other antiseptic eye lotion, to be dropped into the culdesac three times a day, to protect the eyeball from infection.

"2 The infant's head is held between the surgeon's knees in a manner similar to the method in vogue of inspecting the eyeball. Assuming that it is the right sac that is affected, he places his right thumb over the sac in a way to shut off the return flow through the puncta. This is done by holding the thumb sidewise, with the thumb nail outward and forming an acute angle with the plane of the iris. The edge of the thumb is now pressed downward over the puncta, compressing it against the rim of the orbit, with this point of pressure maintained, the thumb is rotated to the right, at the same time pressing downward, abruptly over the sac. The fluid, now being compressed by the thumb, transmits the pressure to the walls of the sac, which must give way at its weakest point, which happens to be the site of the nasal opening. Repeated cures, after one manipulation of this sort, and no failures so far, extending over a period of seven years, convince me that the probe should never be resorted to except as a last resort.

"The salient points to be remembered are

"(1) Pressure must be made over the sac only when it is distended.

"(2) Care should be taken that the thumb is applied in such a way as to prevent regurgitation into the conjunctival sac.

"(3) Sudden pressure over the sac causes the retained fluid to burst through the persistent fetal membrane which separates the mucous lining of the nose from that of the nasal duct."

After two to three weeks of conscientious expression as advised under the first group of this phase of treatment, the use of the probe should be advised. The probing of the duct of the newborn is usually not attended with difficulty. While the maneuver can be ac-

complished without the aid of an anesthetic, preference is for a very light ether anesthesia sufficient to secure quiet of the head, particularly in babies over 6 to 8 weeks of age. The use of the Berger loupe is urged again to accentuate the anatomic markings. Having evacuated the contents of the sac, the conjunctiva is flushed with boric acid solution. To enlarge the lower punctum a Wilder's long taper punctum dilator is introduced gently for about 2 to 3 mm. This should not be carried beyond this point, otherwise, with the increasing taper of the instrument, the sphincter muscle surrounding the punctal opening might be ruptured and the capillary action of this structure be destroyed. For the same reason slitting of the canaliculus is deprecated. A No. 1 Bowman probe is advocated. After introduction into the punctum, the probe is carried inward on a horizontal plane to meet the nasal bone. At this latter point the instrument is steadied by gentle pressure, turned to the vertical, and passed downward in the canal, its course prescribed by a line drawn from the inner canthus to the corresponding nasolabial fold. It must be remembered that its course is short, 5 to 6 mm, representing the distance from the lacrimal fossa to the floor of the nose. Ordinarily the probe is passed with ease and is soon felt to meet resistance on the floor of the nose. To make sure that the probe has reached the nasal cavity, a second probe can be introduced along the floor of the nose and made to course along the outer wall. If the first probe has reached the floor, a metallic click can be felt and sometimes heard when the second probe engages the first. In addition, a movement of the upper end of the first probe is apparent when agitated from below. In other instances, the probe can occasionally be seen with the aid of a nasal mirror and a small nasal speculum.

No complete statistics as to its incidence are available. Zeigler saw 2 cases in twenty years of practice. In the combined private practice and the Rostock clinic practice of Professor Peter only 17 cases were observed between 1901 and 1908. In the course of three and one-half years, 15 cases were treated at the women's clinic in Dortmund. Robert A. Campbell reports 5 cases observed over a period of twelve years. I have observed 26 cases in the course of eleven years. This higher incidence may be explained by my association with a maternity hospital and with the obstetric department of a general hospital.

The age of the infant at the time of the first visit in the practice of others was a variable

factor, usually from 6 to 14 weeks. In my practice the average age was 7 weeks, although they have been seen as early as 1 to 2 weeks. Four cases with a diagnosis of chronic dacryocystitis were observed in the first years of life as a result of neglect or improper treatment. All 4 gave histories involving the lacrimal apparatus shortly postpartum. Two of these were relieved by extirpation of the sac. Treatment was deferred in the other 2 cases.

A gradual approach in the form of treatment is recommended, advancing from the simplest to the more radical. By this method probing may be avoided in approximately 50 per cent of the cases, 25 per cent responding to the nasal approach and the other 25 per cent by expression. The promptest relief is obtained by probing, although this may occasionally have to be repeated in order to effect a cure. Those responding to the method advocated by Creigler and the others who were relieved by the nasal approach were cured in from two to three days.

Cure by repeated expression was slower, averaging about eleven days, but in some instances cure was delayed slightly beyond this time.

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### Discussion

Dr Mortimer A Lasky, *Brooklyn*—Dr Judge is to be congratulated for his excellent presentation of the etiology and methods of treatment for this not uncommon ailment. This condition has been sadly neglected in most of the texts and in scientific meetings. It is very easy to minimize such cases, and, as we know, many cases of chronic dacryocystitis with all its accompanying suffering, inconveniences, and complications result from careless neglect or inadequate treatment. With such a simple procedure as Dr Judge describes, it should be unnecessary for the great majority of these conditions to fail being cured when still in their early stages.

The technic is not complicated and is apparently very successful. The mere removal of a mass of mucus and cellular debris from the nasal end of the nasolacrimal duct serves to establish drainage and obviate any further treatment. It is a means of treatment that does not require the services of an ophthalmologist. All general

practitioners and obstetricians should be made cognizant of this procedure so that they will apply it as soon as a watery eye is discovered. Thus, there would be no tendency to procrastinate and wait for nature to repair a defect that might be more serious than realized. If the condition is not corrected by this early treatment, the practitioner should certainly become concerned enough to seek the advice of an ophthalmologist and not wait for an inflammation to supervene.

Dr Judge objects to the commonly used term "congenital dacryocystitis," which implies that the infant so affected was born with an inflammation of the lacrimal sac. This is a valid objection for the great majority of these cases. However, I have personally seen a newborn who had an acute dacryocystitis at birth. The region of the sac was red and distended and the eye was watery. The tumor mass was incised on the second day and a thick creamy pus was obtained. It proved to be a staphylococcal infection which cleared up very promptly after a bacteriophage solution was injected into the sac through the skin incision, resulting in a sudden flow of mucus and pus out of the nose. I feel that this was merely a mechanical cure.

I wish to thank Dr Judge for giving us this new method which is certainly a very useful adjunct to our therapeutic armamentarium and which will probably result in many earlier cures and make unnecessary the too frequent reliance on probing or irrigations with their often unavoidable exposure of an infant to the dangers of a general anesthetic.

Dr James I. Farley, *Utica, New York*—It has been a pleasure to have read Dr Judge's paper on "Dacryocystitis of the Newborn." He has covered the subject quite completely. He does make this statement, "The incidence of these more commonly unaccepted causes must be relatively small," and I would like to ask him to explain it more fully.

I have had no experience in the treatment he describes in which he uses a nasal applicator, wound tightly with cotton, to clean out the area beneath the inferior turbinate bone. During the past seven years I have seen 8 infants on whom I have made a diagnosis of dacryocystitis of the newborn. Five of these responded to expression, and 3 had to be probed before showing a cure. With all patients the mother was advised to douche the eye at least morning and night with boric acid solution and to instill a drop of 2 per cent mercurochrome following the douching. At the time of each feeding, I had the mother instill a drop of 1/4 per cent of zinc sulfate solution. Before the douching she was instructed to exert pressure on the lacrimal sac, pressing backward, inward, and slightly downward, and she was told the reason why. If any matter regurgitated from the sac, it was removed by the douching. If after 6 months of age there was still a blockage,

probing was resorted to. In those cases where probing has not been necessary, a cure has been obtained within two or three weeks of treatment. Ether anesthesia was used in the 3 patients in which the probe was passed.

Dr. Jason L. Wiley, *Auburn, New York*—I have little to add to Dr. Judge's excellent presentation of this subject. I have seen 10 cases in a practice of twenty years. Two of these were cured by expression and 8 by the probe. I have not been in the habit of expressing as long as Dr. Judge advocates. I wonder if this is entirely devoid of danger. With proper care, probing seems to me almost without danger. May I ask Dr. Judge if he has seen any definite permanent damage from the use of the probe? I question the value of any antiseptic three times a day in a conjunctival sac that is bathed with pus twenty-four hours a day.

Dr. Judge says nothing about cases of a solid bony obstruction. While I have never seen this condition, Dr. Benedict, of Rochester, has reported it and says he believes it is usually due to congenital syphilis. In 1 case I was unable to pass a probe through the lower canaliculus but met with no difficulty through the upper canaliculus, and the condition was as satisfactorily cured as any of my other cases. I have not seen a bilateral case nor have I seen an acute abscess in these patients.

I am grateful to Dr. Judge for his paper and especially for the suggestion that a goodly percentage of these cases can be cured by swabbing under the lower turbinate of the affected site. This is new to me, and I shall try it in all cases in the future. I think a suction apparatus with a small tip might be more efficient for this purpose.

#### THE N. Y. ACADEMY ELECTS OFFICERS

The election of the following officers of The New York Academy of Medicine took place on December 5, 1940: president for a term of two years, Malcolm Goodridge, M.D., vice-president for a term of three years, Henry Cave, M.D., two trustees for a term of five years, George Baehr, M.D., and Arthur F. Chace, M.D., three

members of committee on library for a term of three years, Alfred E. Cohn, M.D., Howard R. Craig, M.D., and Jerome P. Webster, M.D., four members of committee on admission for a term of three years, J. William Hinton, M.D., John E. Scarff, M.D., William E. Studdiford, M.D., and Edward Tolstoi, M.D.

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# THE INHIBITING ACTION OF TESTOSTERONE PROPIONATE IN POSTPARTUM LACTATION

ALFRED M. HELLMAN, M D , F A C S , and LEONARD F. CIMER, M D , New York City

THE male sex hormone, testosterone propionate, has been used to some extent and with varying results in the treatment of certain disorders of the mammary gland in both male and female

Wernicke<sup>11</sup> reported the use of this hormone in 4 cases (3 with atrophied left testicle) having unilateral gynecomastia. Testosterone propionate was employed in doses of from 2½ mg twice weekly to 25 mg three times weekly according to response. Although the normal case in his series was unresponsive, of the 3 with atrophied testicle, 2 were favorably influenced. Hoffman<sup>6</sup> also employed testosterone in the treatment of males with breast hypertrophy. Twenty-eight patients (ages 11 to 73) were injected with 5 to 25 mg twice a week with resultant regression in size of the mass in 14 and a degree of regression exceeding 75 per cent occurring in 9 cases. The elapsed time before complete regression occurred varied from two to five months, and the number of injections averaged twenty-eight. It was not unusual to note a regression of 50 per cent during the first four weeks of treatment. Bender<sup>2</sup> treated 12 cases of premenstrual mastopathy with testosterone propionate over a period of six months according to the following schedule: two to three days previous to the anticipated onset of breast symptoms each patient received four injections of 5 mg on alternate days, the date for initiating therapy being selected so that treatment would be discontinued two days prior to menstruation. Four cases in his series were completely and permanently relieved of their mastopathy, 6 were greatly benefited, and 2 were unresponsive. Desmarest and Capitain<sup>4</sup> also administered testosterone propionate to women with premenstrual mastopathy and obtained uniformly good results. Irregular and painful menstruation concomitant with the mastopathy was relieved and cystic mammary swelling diminished. They noted that the normal menstrual cycle was not affected by therapeutic doses. Spence<sup>9</sup> employed testosterone propionate in the treatment of 16 cases of masti-

tis, using doses of 25, 50, and 100 mg usually twice a week for several months. Fourteen of these cases were relieved of pain, nodules disappeared in 3 cases and in 5 cases there was a reduction in size of nodules.

Postpartum engorgement of the mammary gland is a common disorder and one frequently accompanied by considerable discomfort. In this condition, which appears from one to four days after delivery, the breasts are heavy, swollen, painful, and tender, and the overlying skin presents a reddish blue, mottled appearance. The nipples often are retracted to such a degree that the very means designed by nature to bring relief—namely, natural withdrawal of the milk secretion—becomes impossible. The usual measures for combating this disorder are elevation of the breasts, application of cold (occasionally heat) and a tightly fitting binder, restriction of fluids, low caloric diet, saline cathartics, and the administration of sedative drugs. Despite these active ministrations, the discomfort experienced during the first few days postpartum is often recalled with greater clarity than that suffered during labor itself. Although the cause of breast engorgement in these cases is largely due to venous stasis and interference with the lymphatic circulation, nevertheless a definite amount of milk secretion is present and adds measurably to the extent of the discomfort. Under stimulation of the lactogenic hormone elaborated by the cells of the anterior pituitary gland, swelling of the acinar cells of the breast takes place, the lymphatics become engorged, and the individual milk ducts become palpable. If nursing is possible or if withdrawal of the breast contents is affected by other means, the gland cells are split into globules of fat, and milk is elaborated from the neighboring lymphatics. Though the entire process is physiologic, it is frequently carried to an unpleasant extreme, especially in primiparas. Abarbanel,<sup>1</sup> in a series of 50 patients with severe and painful engorgement, was able to effect practically complete relief in 92 per cent of the cases with the use of 10 mg doses of testosterone propionate. Kurzrok and O'Connell,<sup>7</sup> in a series of 21 cases to avoid the painful manifestations of lactation, obtained a 90 per cent result with

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We are indebted to Dr Ralph Shaner of the Roche Organon Corporation, Mr Robert Mautner of the Ciba Pharmaceutical Company and to the Schering Corporation for their generous supply of testosterone propionate

regard to symptomatology In both series no actual inhibition of lactation was noted In an effort partially to control pain and partially to effect suppression of lactation in selected cases and bearing in mind the depressing action of the male sex hormone upon the function of the anterior pituitary gland, we also have employed testosterone propionate in varying doses, both prophylactically and therapeutically, in a series of cases postpartum

Seventy-seven mothers, mostly private patients, varying in age from 19 to 45 years (average age 28 years), and consisting of 41 primiparas and 36 multiparas, were given injections of testosterone propionate from eight to 120 hours postpartum (average forty-eight hours) depending upon effect desired and degree of breast engorgement if present With this group no restrictions were placed on their fluid intake or dietary regimen Some cases were treated only when mammary engorgement became noticeable, but others whose histories indicated previous difficulties of like nature or in whom, for one reason or another, lactation was not desirable were treated prophylactically The dosage schedule employed varied from 10 to 50 mg daily, with total dosage ranging from 40 to 275 mg (Table 1) The majority of cases received 50 mg daily on two successive days, the average total dosage for the series being 87 mg Objective breast symptoms, such as engorgement, tenderness, lumpiness, and redness, were observed and recorded on a zero to 3 plus basis, representing the prominence of each symptom In the same manner subjective symptoms, such as general discomfort, fullness, soreness, heaviness, pain, and malaise, also were elicited and recorded The percentage incidence of these symptoms is displayed in the accompanying table (Table 4) Complete suppression of lactation was effected in 35 cases (50 per cent), while in 24 cases (34 per cent) only slight secretion resulted (Table 2) The remaining cases either were unaffected or leakage of milk lasted over five days A number of the latter showed slight to moderate secretion from five to ten days then ceased lactating entirely Menses returned with sur-

TABLE 1—DOSAGE RANGE AND TIME INSTITUTED

Daily dosage range	10-50 mg
Total dosage range	40-275 mg
Average total dosage	87 mg
Time therapy instituted postpartum	8-120 hr
Average time therapy instituted postpartum	48 hr

TABLE 2—RESULTS WHEN USED PROPHYLACTICALLY

	Cases	Percentage
Total	70	
Total inhibition of lactation	35	50
Slight inhibition	24	34
Unaffected or lactation lasting over 5 days	11	16

TABLE 3—TABULATION OF RESULTS

	Cases	Percentage
Total	77	
Poor	9	11
Fair	12	16
Good	56	73

prising rapidity in most instances Two patients menstruated within four weeks postpartum, and practically all had their menses within two months

Analysis of symptoms shows engorgement and tenderness to be the most common objective symptoms, whereas the incidence of rubor was practically nil Heaviness was the chief subjective symptom elicited, while the percentage incidence of malaise was low Results were evaluated as poor, fair, and good, and the following brief case histories illustrate the method used and contain the criteria applied for proper classification (Table 3)

### Case Reports

*Case 1*—Para I, aged 30, had a low forceps delivery There was a normal puerperium except for breast symptoms She complained of general discomfort, marked fullness, and soreness and heaviness of breasts which on examination were found to be slightly reddened, moderately engorged, tender, and lumpy Beginning twenty-eight hours postpartum, testosterone propionate in 25 mg doses was given intramuscularly twice daily for four days Although discomfort persisted for only twelve hours, the breasts continued to secrete for eight days This result was considered poor

*Case 2*—Para II, aged 25, had a low forceps delivery She complained of pain, soreness and heaviness of breasts, and general discomfort

TABLE 4

Objective Symptoms in 77 Cases					Subjective Symptoms in 77 Cases					
	Engorge- ment, per- centage	Tender- ness, per- centage	Lumpi- ness, per- centage	Red- ness, per- centage	General dis- comfort, per- centage	Full- ness, per- centage	Sore- ness, per- centage	Heavi- ness, per- centage	Pain per- centage	Malaise per- centage
None	23-30	31-40	36-47	69-89	51-66	24-31	32-42	18-23	53-69	64-83
Slight	30-39	30-39	26-32	7-9	15-19	34-44	30-39	39-51	18-23	11-14
Moderate	16-21	16-19	14-18	1-13	10-13	10-13	11-14	16-21	6-8	2-26
Severe	8-10	1-13	2-26		1-13	9-12	4-5	4-5		

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THE male sex hormone, testosterone propionate, has been used to some extent and with varying results in the treatment of certain disorders of the mammary gland in both male and female.

Wernicke<sup>11</sup> reported the use of this hormone in 4 cases (3 with atrophied left testicle) having unilateral gynecomastia. Testosterone propionate was employed in doses of from 2½ mg twice weekly to 25 mg three times weekly according to response. Although the normal case in his series was unresponsive, of the 3 with atrophied testicle, 2 were favorably influenced. Hoffman<sup>6</sup> also employed testosterone in the treatment of males with breast hypertrophy. Twenty-eight patients (ages 11 to 73) were injected with 5 to 25 mg twice a week with resultant regression in size of the mass in 14 and a degree of regression exceeding 75 per cent occurring in 9 cases. The elapsed time before complete regression occurred varied from two to five months, and the number of injections averaged twenty-eight. It was not unusual to note a regression of 50 per cent during the first four weeks of treatment. Bender<sup>3</sup> treated 12 cases of premenstrual mastopathia with testosterone propionate over a period of six months according to the following schedule: two to three days previous to the anticipated onset of breast symptoms each patient received four injections of 5 mg on alternate days, the date for initiating therapy being selected so that treatment would be discontinued two days prior to menstruation. Four cases in his series were completely and permanently relieved of their mastopathy, 6 were greatly benefited, and 2 were unresponsive. Desmarest and Capitain<sup>4</sup> also administered testosterone propionate to women with premenstrual mastopathy and obtained uniformly good results. Irregular and painful menstruation concomitant with the mastopathy was relieved and cystic mammary swelling diminished. They noted that the normal menstrual cycle was not affected by therapeutic doses. Spence<sup>9</sup> employed testosterone propionate in the treatment of 16 cases of mast-

itis, using doses of 25, 50, and 100 mg usually twice a week for several months. Fourteen of these cases were relieved of pain, nodules disappeared in 3 cases and in 5 cases there was a reduction in size of nodules.

Postpartum engorgement of the mammary gland is a common disorder and one frequently accompanied by considerable discomfort. In this condition, which appears from one to four days after delivery, the breasts are heavy, swollen, painful, and tender, and the overlying skin presents a reddish blue, mottled appearance. The nipples often are retracted to such a degree that the very means designed by nature to bring relief—namely, natural withdrawal of the milk secretion—becomes impossible. The usual measures for combating this disorder are elevation of the breasts, application of cold (occasionally heat) and a tightly fitting binder, restriction of fluids, low caloric diet, saline cathartics, and the administration of sedative drugs. Despite these active ministrations, the discomfort experienced during the first few days postpartum is often recalled with greater clarity than that suffered during labor itself. Although the cause of breast engorgement in these cases is largely due to venous stasis and interference with the lymphatic circulation, nevertheless a definite amount of milk secretion is present and adds measurably to the extent of the discomfort. Under stimulation of the lactogenic hormone elaborated by the cells of the anterior pituitary gland, swelling of the acinar cells of the breast takes place, the lymphatics become engorged, and the individual milk ducts become palpable. If nursing is possible or if withdrawal of the breast contents is affected by other means, the gland cells are split into globules of fat, and milk is elaborated from the neighboring lymphatics. Though the entire process is physiologic, it is frequently carried to an unpleasant extreme, especially in primiparas. Abarbanel,<sup>1</sup> in a series of 50 patients with severe and painful engorgement, was able to effect practically complete relief in 92 per cent of the cases with the use of 10 mg doses of testosterone propionate. Kurzrok and O'Connell,<sup>7</sup> in a series of 21 cases to avoid the painful manifestations of lactation, obtained a 90 per cent result with

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We are indebted to Dr Ralph Shaner of the Roche-Organon Corporation, Mr Robert Mautner of the Ciba Pharmaceutical Company and to the Schering Corporation for their generous supply of testosterone propionate.

tured spayed rats and found that the pituitary lactogen content was augmented. They feel, therefore, that the action of the male sex hormone in suppressing lactation is due neither to suppression of lactogen secretion nor to suppression of its discharge into the blood stream. Testosterone propionate may conceivably act directly through the circulatory system upon the lymphatics and veins of the mammary gland which, of course, become tremendously engorged a few days after delivery. Early menstruation in a number of cases, however, would speak for disappearance of the corpus luteum, and this in turn would seem to indicate withdrawal of the protecting influence of the lactogenic hormone, i.e., action of testosterone directly upon the anterior pituitary.

Cacciarelli<sup>3</sup> reported the use of an ovarian extract and a preparation containing both ovarian and anterior pituitary extracts in a series of cases for the purpose of suppressing postpartum lactation. The rationale of employing a whole ovarian extract without estrogenic activity in this indication is not quite clear, though results obtained were said to be satisfactory. The use of an anterior pituitary preparation without galactotropic properties rests upon a sounder theoretical basis, since by stimulation of ovarian function the resultant elaboration of material with estrogenic activity would provide an inhibitor of anterior pituitary lactogenic action with resultant suppression of lactation. A function of the ovarian hormones is, of course, to build breast tissue, the estrogenic principle encouraging development of the duct system and the corpus luteum principle leading to alveolar and, hence, lobular growth. As long as these hormones are circulating in sufficient concentration in the blood, however, the process of lactation itself is held in abeyance. The action of the male sex hormone is similar in character.

## Summary

1 The male sex hormone, testosterone propionate, was employed to suppress postpartum lactation in a selected but representative group of 77 mothers.

2 Breast symptoms, both subjective and objective (if slight complaints are ignored), were prevented in a large percentage of patients where the administration of testosterone was begun early and was employed as a prophylactic measure. A high percentage of patients already lactating responded promptly to the application of testosterone.

3 Forty-eight hours postpartum was found to be the average optimum time for initiating therapy in this indication, though an occasional case would seem to demand earlier medication for effective suppression of secretion and prevention of untoward symptoms.

4 An average dose of 87 mg per patient was found to have optimum milk inhibiting activity, though dosage schedules were naturally varied to meet individual requirements.

5 No undesirable aftereffects of testosterone medication were noted in any of our cases.

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## PREVALENCE OF TRICHINOSIS

The surprising estimate that one out of every six Americans is infected with the trichinosis parasite is made by the United States Public Health Service, according to a release sent out by Senator Thomas C. Desmond, chairman of the New York State Trichinosis Commission, first of its kind in the country. He says:

Our commission will investigate all phases of trichinosis, including five suggested preventives: (1) skin tests on hogs to determine whether or not they are infected, (2) compulsory cooking of garbage before it is fed to hogs, (3) microscopic inspection of all pork products, (4) required

refrigeration of hogs immediately after slaughter, and (5) state meat inspection similar to the federal service.

"One of the first activities of the State Trichinosis Commission will be to examine hundreds of hot dogs, hamburgers, pork sausages, and other pork products made and sold in New York State. This examination will help determine whether processing of intrastate pork to eliminate the trichinosis parasite should be required and whether the mixing of pork in hamburgers, often mentioned by medical authorities as a cause of trichinosis, should be stopped."

Her breasts were moderately tender, slightly engorged, and lumpy. Beginning thirty-three hours postpartum, testosterone propionate, 50 mg, was given on the first day followed by 25-mg doses on each of the next two days. Although no leakage of milk occurred, the severity of subjective and objective symptoms led to the classification of the result in this case as only fair.

*Case 3*—Para I, aged 23, had a spontaneous delivery with total absence of subjective and objective symptoms. Beginning thirty-seven hours postpartum, testosterone propionate was administered according to the following schedule: 50 mg during the first twenty-four hours and 25 mg daily for the next two days. All symptoms remained in abeyance and no lactation occurred. Results in this case were classified as good.

*Case 4*—Para II, aged 31, had a spontaneous delivery. There was a normal puerperium with exception of breast symptoms. Although the patient complained of no general discomfort, the breasts were seen to be definitely engorged and were tender to pressure. Beginning sixty-five hours postpartum, testosterone propionate in 25-mg daily doses was administered for three days. No other measures were employed. The fact that all symptoms subsided, that the breasts began to soften in twenty-four hours, and that very slight lactation persisted for only three days led to the classification of results obtained in this case as good.

*Case 5*—Para I, aged 32, had a high forceps delivery. There was an entirely normal puerperium. Beginning thirty-six hours postpartum, testosterone propionate in 50 mg doses was administered daily for two days. There were absolutely no breast symptoms, either objective or subjective, and no leakage of milk. Result was classified as good.

*Case 6*—Para II, aged 34, had a spontaneous delivery. There was a normal puerperium except for breast symptoms. Six and one-half days postpartum, during which time patient had attempted unsuccessfully to nurse infant, breasts became painfully engorged, tender, and moderately heavy and lumpy. One injection of testosterone propionate, 25 mg, brought about complete relief within twelve hours. The results obtained in this case, therefore, were classified as good.

*Case 7*—Para XIII, aged 45, had a breech delivery. There was a normal puerperium. Despite the fact that the patient had successfully nursed 10 babies, the administration, beginning forty hours postpartum, of testosterone propionate in 50-mg doses on two successive days forestalled, in large measure, the development of usual breast symptoms, and secretion of milk was entirely prevented. The results were classified as good.

*Case 8*—Para I, aged 26, had a spontaneous delivery. There was a normal puerperium except for breast symptoms which developed on

the third postpartum day. A total of 125 mg of testosterone propionate was administered without apparent effect. The results were classified as poor.

*Case 9*—Para I, aged 29, had a midforceps delivery. The puerperium was complicated by development of endometritis. Administration of testosterone propionate (75 mg) beginning seventy-two hours postpartum was followed by only slight breast engorgement which persisted for about eight hours. There was no milk secretion. The results were classified as fair.

*Case 10*—Para II, aged 32, had a cesarian section. There was a normal puerperium except for breast symptoms as described. Treatment was started forty-eight hours postpartum. Breasts were soft and unengorged until the end of fifth day when they filled. They softened immediately with further therapy, but upon cessation they again became engorged, again softened with more testosterone, and remained soft thereafter. A total of 275 mg was given. The results were considered fair but very interesting because of the response to therapy.

Many cases responded dramatically to treatment with testosterone propionate during the puerperium, symptoms both subjective and objective being held entirely in abeyance and the secretion of milk being effectively arrested. One case gave a perfect response to only four daily injections of 10 mg each, secretion being controlled and normal menses beginning six weeks postpartum. On the other hand, 1 case, a Para II, aged 32, required the administration of 275 mg in divided daily doses to control her breast symptoms which finally subsided on the eighth day.

## Discussion

In many instances it is highly desirable to suppress postpartum lactation. Patients with persistent soreness or deformation of the nipples and with histories of breast disorders during previous pregnancies, patients whose infants expired sometime previous to or actually during labor, and patients who for various social or economic reasons refuse to nurse their offspring, all these welcome the application of effective milk inhibiting measures.

Inhibition of lactation and prevention of breast engorgement during the puerperium were effected in an important percentage of our cases by the use of the male sex hormone, testosterone propionate. The mechanism of action may be one of depression of function of the anterior pituitary, thereby reducing the amount of circulating lactogenic hormone. On the other hand, Reece and Mixner<sup>3</sup> employed testosterone propionate in 200 gamma daily doses for fifteen days on sexually ma-



FIGS 1 and 2 CASE 3

In the survey, consultation, and diagnostic service rendered by the Bureau of Tuberculosis of the Department of Health, we have occasion to see and interpret the chest x-rays of many thousands of people. These people range in age from infancy to old age and represent a reasonably accurate cross section of the poor and middle-class population of New York City.

In these x-ray plates we have been impressed by the not infrequent finding of radiologic densities, undoubtedly abnormal, without the patient showing any constitutional disturbances. These findings appear, progress, and resolve in a period of weeks or months. From the x-ray point of view they resemble most closely those cases described by Smiley<sup>7</sup> and Bowen.<sup>8</sup>

From the clinical point of view they correspond most closely to those suggested by Majors<sup>4</sup>, Bowen<sup>8</sup>, and to a lesser extent Allen.<sup>5</sup>

We hasten to add that these cases are by no means completely studied. It is beyond the scope of the Chest Service to do blood counts, cultures, sputum typing, etc., or even follow these cases for an indefinite period of time. Nevertheless, insofar as we have been able to observe—the radiologic appearance and disappearance of the lesion, the course of the disease, the physical signs, complete resolution in a comparatively short time, etc.—we feel that these cases belong somewhere in the family of the pneumonias, despite the fact that they were afebrile and asymptomatic and that resolution occurred without therapy.

The cases that follow were studied at the various consultation and diagnostic clinics of the Board of Health of the City of New York.

### Case Reports

*Case 1*—M. T., white man, aged 22, reported to the Central Chest Clinic on May 12, 1939,

because a survey x-ray taken on April 3, 1939, revealed an infiltration in the fourth and fifth left interspaces near the periphery. This area was soft and mottled. He stated that he felt fine. He admitted that he had a slight cold in April when his first x-ray was taken but denied being ill with it. He vigorously denied any illness within the past few months. His past history revealed a pleuropneumonia of the lower lobe of the right lung four years ago. He also admitted being susceptible to occasional "grippe." He had lost no weight, had no chronic cough, never had hemoptysis, etc. His family history was essentially negative.

Physical examination revealed a well-nourished man. His temperature was 98 degrees, pulse, 78 per minute, and respirations, 20 per minute. His weight was 156 pounds and height was 5 feet 10 inches. There was no dyspnea or cyanosis. Chest examination revealed some impairment of resonance over the lower lobe of the left lung with few transient subcrepitant rales. The Mantoux test (0.10 mg.) with old tuberculin was negative, and 1.0 mg. two days later was only slightly positive. Repeated sputums for tubercle bacilli were negative. Sputum typing revealed pneumococci above type XXXII. An x-ray at this time, May 12, 1939, showed complete clearing of the area described above.

*Case 2*—D. L., white girl, aged 18, was called to the Central Chest Clinic because a routine survey chest x-ray on March 30, 1939, revealed patchy infiltration of upper lobes of both lungs, most marked in the right lung.

She appeared at the clinic on May 11, 1939, and stated she felt fine, had no cough, no fever, no sweats, and no loss in weight. She admitted having had a cold in March, 1939. Her past history and family history were negative.

Examination revealed a well-nourished girl, not apparently ill. Her weight was 116 pounds and height was 5 feet 3 inches. Her temperature was 99.4, pulse, 100, and respirations, 20. There were no abnormal physical signs. An x-ray taken at this time revealed clearing of the affected areas. Sputums were negative for the tubercle bacillus, and no organisms were re-

# ATYPICAL PNEUMONIAS

HARRY FREDD, M D , Brooklyn

VOLUMES have been written on the pneumonias. Tremendous advances have been made in the study and conquest of these diseases. And yet the clinical picture given us by Hippocrates<sup>1</sup> of "acute fever, cough, pain, sputum and tendency to get well in a week" remains essentially our clinical picture today.

Today, the emphasis in pneumonia is on etiology rather than the clinical picture, for our serotherapy, and to a lesser extent chemotherapy, depends upon the causative agent.

Nevertheless, if we are to get a true concept of the incidence of pneumonia, some emphasis must be placed upon the recognition of all atypical types.

It is true that many atypical pneumonias have been described. The common ones are well known, and yet we have been impressed by an atypical type of pneumonia that has not been clearly defined. This type is afebrile, is asymptomatic, and depends upon x-ray study of the chest for its discovery.

A review of the literature yields little reference to this type of atypical pneumonia.

As far back as 1910 Tuller<sup>2</sup> called attention to an afebrile type of pneumonia occurring in certain individuals. However, his cases did not quite correspond to ours. His findings occurred only in debilitated individuals, and persons suffering from alcoholism, nephritis, etc. Furthermore, he felt, that the normal temperature of his patients was below 98.6 degrees. Therefore, a temperature of 100 degrees might correspond to a temperature of 102 degrees in so-called normal individuals. In all his cases some severe systemic intoxication antedated the onset of the pneumonia.

Similarly, Farroni<sup>3</sup> recorded an afebrile pneumonia in 1910, but the picture he described was one of typical pneumonia without fever and was in no way similar to the cases we will describe.

In 1927 Majors<sup>4</sup> called attention to atypical pneumonias without temperature disturbance, without chill, and with little or no pain. However, his discussion of atypical pneumonia concerned itself mainly with the gastrointestinal, meningitic, and abdominal symptoms in pneumonic children rather than the

classic textbook symptoms of pneumonia. Nevertheless, his conclusion was that "numerous cases of atypical pneumonia come under our care, terminating either in death or recovery, without our being able to detect the existence of the disease." We are in complete agreement with this statement, although none of our patients have died.

Probably the cases we are about to describe fit in best with those so carefully discussed by Allen<sup>5</sup> in 1936. He grouped these cases under the name "acute pneumonitis." These he defined as "respiratory infections, benign in course, with few physical signs, and x-ray evidence of localized pulmonary involvement."

In his excellent paper Allen described a group of 68 cases. However his patients were febrile, had all the classic symptoms of influenza, apparently required hospitalization, and some developed complications. But the diagnosis of pneumonia in his cases, could be made only by x-ray—a finding identical with ours.

Similarly, Bowen<sup>6</sup> stated that 5 to 25 per cent of influenza cases developed "pneumonitis." He felt that systematic x-ray of even mild influenza cases (headache, backache, malaise, temperature above 100 degrees, injected pharynx, etc.) would show a "pneumonitis." In his opinion this occurred in a high percentage of cases, and resolution was complete within two weeks. However, his records revealed many severe cases that ultimately had typical pneumonic symptoms and signs, and death occurred in some of these. Our cases resemble his closely, at least from the roentgenologic point of view. However, our patients had no definite influenza so far as we could determine, they took much longer to resolve, and none died.

While this paper was being prepared, we were happy to find an article by Smiley and his associates<sup>7</sup> on "acute interstitial pneumonitis." However, his cases were febrile, more communicable, and more toxic. Here, too, the x-ray pictures described by him were very similar to our own. Without a doubt our cases probably represent a mild grade of the condition he described.

Similarly, Reimann<sup>8</sup> described cases that resembled ours from the x-ray point of view. But his atypical pneumonias were more toxic, dyspneic, and febrile.

From the Central Chest Clinic, Bureau of Tuberculosis, Department of Health New York City

sultation Service for diagnosis on April 12, 1939. Examination revealed an undernourished man, not acutely ill. His temperature was 98 degrees, pulse, 82, respirations, 24, weight, 118 pounds, and height, 5 feet 5 inches. An x-ray plate revealed patchy infiltration in the left third and fourth interspaces, with parenchymal mottling from the hilum to the periphery. Sputums were negative for tubercle bacilli. Resolution was complete on May 11, 1939.

*Case 11*—R. R., white boy, aged 6, came into the Diagnostic Clinic on April 20, 1939, complaining of cough and moderate expectoration of one week's duration. His temperature was 98 degrees, pulse, 94, and respirations, 24. Dullness and rales were present over the lower right lung field. An x-ray revealed confluent densities along the right border of the heart in the medial portion of the lower lobe of the right lung. On May 20, 1939, roentgenologic study showed this area to have completely resolved.

*Case 12*—M. G., white man, aged 37, complaining of cough and copious expectoration of three weeks' duration came to the Diagnostic Clinic on November 16, 1938. His temperature was 98 degrees, pulse, 100, respirations, 22, and weight 143 pounds. Dullness, crepitant rales, and bronchovesicular breathing were present over the lower right lung field. An x-ray (Fig 3) at this time revealed bronchopneumonic infiltration of the lower lobe of the right lung. On December 7, 1938, all signs had cleared. An x-ray confirmed this clearing.

*Case 13*—V. R., white boy, aged 9 was examined as a contact in 1936, 1937, and 1938. The Mantoux test was negative. Sputums and x-ray were negative on February 21, 1939, and the patient was discharged. On January 10, 1938, he had developed an area of infiltration, patchy in distribution, in the left fourth and fifth interspaces. He had had a cough, but was not ill and had had no fever. This area cleared completely in two months and his Mantoux test and sputums remained negative.

*Case 14*—M. G., Negro, aged 36, came into the Diagnostic Clinic on November 16, 1938, complaining of cough and expectoration. His temperature was 99 degrees, pulse, 96, and respirations, 24. Examination revealed dullness, bronchovesicular breathing, and numerous rales over the upper left lung field (Fig 3). Sputums were negative for tubercle bacilli. An x-ray revealed an area of density from the third to the fourth left anterior ribs extending from the periphery to the hilum. The diagnosis at this time was lobar pneumonia. An x-ray on January 10, 1939, showed this area to be entirely cleared.

*Case 15*—B. L., white girl, aged 20, came into the clinic for diagnosis on March 30, 1939. Her chief complaints were cough and pain in the left chest of two months' duration. Her temperature was 99 degrees, pulse, 100, respirations, 22, weight, 150 pounds, and height, 5 feet 5 inches. Repeated sputum examinations were negative



FIG 3 CASE 14.

for tubercle bacilli. No typing was done. Physical examination revealed a well-nourished girl, not acutely ill. There was some impairment of the resonance over the upper lobe of left lung, anteriorly, with a few subcrepitant rales (Figs 4 and 5). An x-ray showed infiltration in the left first and second interspaces. This patient returned on May 8, 1939. An x-ray and examination at this time showed complete clearing.

*Case 16*—C. D., white girl, aged 7, came into the Diagnostic Clinic on February 27, 1939, complaining of cough with yellowish expectoration of three weeks' duration. Her temperature was 98.8 degrees, pulse, 84, and respirations, 20. Examination revealed an undernourished girl, not acutely ill. Dullness was present over the right side of the chest, posteriorly. Numerous moist rales were present here. These rales were also audible over the lower lobe of the left lung, posteriorly. An x-ray at this time revealed patchy infiltration over lower lobes of both lungs. Her sputums were negative for tubercle bacilli. No typing was done. She returned on April 21, 1939, and had gained 7 pounds. Examination, as well as x-ray at this time, revealed complete clearing.

*Case 17*—M. W., white girl, aged 20, was called to the clinic because a survey x-ray on May 10, 1939, revealed a uniform dense area over the left sixth and seventh interspaces, anteriorly, near the periphery of the lung. Sputums were negative for tubercle bacilli. When she reported on June 8, 1939, typing of sputums revealed no organism. She denied all recent or present illness. Physical examination revealed, at this time, bronchovesicular breathing, dullness over the lower left lung field, but no rales. She stated that she had had a cold with moderate expectoration on May 10, 1939 (when the survey x-ray was taken). An x-ray on June 8, 1939, was entirely negative.

*Case 18*—I. P., white boy, aged 19, had a survey x-ray taken on May 12, 1939, which revealed

vealed when her sputums were sent for study and typing

*Case 3*—S S., white boy, aged 16, was called into the Central Chest Clinic because a routine chest x-ray on February 7, 1939, revealed a questionable increase in the transverse diameter of the heart

He came in on March 9, 1939, and stated that he had had a cold for the past week, with moderate expectoration and some pain in the right lower part of the chest. He had had no fever, was not short of breath, and did not feel bad in any way. His past and family history were negative.

Physical examination revealed a well-nourished boy, weight 157 and height 5 feet 10 inches. His temperature was 98 degrees, pulse, 78, and respirations, 18. Examination of the chest revealed dullness over the upper lobe of the right lung with few rales. An x-ray at this time (Figs 1 and 2) revealed a fan-shaped area of infiltration with apex toward the hilum. His sputums were negative for tubercle bacilli.

He was recalled on March 27, 1939, and the affected area had completely resolved. No further sputum study could be made as the patient would not cooperate.

*Case 4*—D U., white man, aged 44, reported on April 20, 1939, for a check-up because of a healed tuberculous lesion at the right apex. He stated that he had been coughing for the past few weeks, with moderate expectoration. He admitted that he had had a few blood specks in his sputum during the past month. His past history dated from 1918 when he was "gassed" in the World War and subsequently learned that he had a few scars at the right apex and in the right lung.

Physical examination revealed him to be moderately well-nourished and apparently not ill. There were dullness, diminished breath sounds, and numerous rales in the lower lobe of the right lung. His temperature was 98 degrees, pulse, 100, and respirations, 20. Repeated concentrated sputums were negative for tubercle bacilli. An x-ray at this time revealed mottled infiltration in the right second, third, and fourth interspaces. There was a small nodular infiltration of the right apex.

On May 8, 1939, he had gained 3 pounds, still had his cough, and felt weak. An x-ray showed a complete clearing of the affected area.

*Case 5*—I S., white man, aged 58, was called into the Central Chest Clinic because a routine survey x-ray on April 17, 1939, revealed a fan-shaped area of infiltration in the right second and third interspaces with the apex toward the hilum. The patient complained of some cough with moderate expectoration, which he attributed to the "grippe." His past and family history were negative. Examination and x-ray on May 31, 1939, revealed a clearing of the affected area.

Sputums were negative for tubercle bacilli and revealed pneumococci above type XXXII.

*Case 6*—E E., Negress, aged 12, came into the Diagnostic Service on January 7, 1939, complaining of cough of four days' duration, moderate expectoration, and a cold for two weeks. Her temperature was 98 degrees, pulse, 102, respirations, 24, and weight, 83 pounds. Physical examination revealed a moderately well-nourished girl, not acutely ill. There were dullness and numerous crepitant rales over the lower lobe of the left lung. Sputums were negative for tubercle bacilli. An x-ray at this time revealed an irregular area of patchy infiltration in the lower lobe of the left lung. The patient returned on February 23, 1939, and had gained 9 pounds in weight, the lung signs had disappeared, and the area in question had cleared on x-ray study.

*Case 7*—M K., Negress, aged 33, came into the Diagnostic Clinic on June 29, 1938, complaining of cough and moderate expectoration. Repeated sputums were negative for tubercle bacilli. Her temperature was 99 degrees, pulse, 100, and respirations, 22. An x-ray at this time revealed a small area of patchy consolidation in the median one-third of the lower lobe of the right lung. There was dullness over this area and a few rales. Two weeks later she returned, and the area shown on x-ray was apparently clearing. Resolution was complete on August 12, 1938.

*Case 8*—K J., Negress, aged 31, complaining of cough of two weeks' duration with moderate expectoration, which she attributed to a post-nasal drip. Physical examination revealed her to be well-nourished and not acutely ill. Her temperature was 98 degrees, pulse, 80, respirations, 20, and weight 149 pounds. Dullness and numerous rales were present over the lower left lung field, posteriorly.

On February 23, 1939, the infiltration appeared more extensive in the lower lobe of the left lung, but three weeks later an x-ray showed this area to be entirely cleared. All sputums were negative for tubercle bacilli.

*Case 9*—B D., white man, aged 29, complained of a cough of one week's duration which was short, hacking, and irritating but not productive. His temperature was 99 degrees, pulse, 80, and respirations, 18. Scattered rales were present over the lower lobe of the left lung. At this time, April 20, 1939, an x-ray revealed a patchy infiltration in the chest over the lower lobe of the left lung, anteriorly. The blood count showed 19,000 white cells of which 85 per cent were polymorphonuclear leukocytes. Sputums were negative for tubercle bacilli. Streptococcus hemolyticus was found in the sputums. On April 27, 1939, this area had entirely resolved. This patient had been put to bed, although he was afebrile, and had had sulfa-pyridine therapy for three days.

*Case 10*—A D., Negro, aged 25, had complained of a cold of two weeks' duration, with questionable fever. He came to the Con-

or a rounded area of moderate density, beginning at the hilum, extending to the periphery, and usually appearing in the basal portion of a lobe

We feel that these represent a true infiltration of the lung rather than an allergic response as Davidson<sup>9</sup> feels

### Conclusion

1 A series of 23,463 chest x-rays were studied, and 64 cases of asymptomatic "pneumonia" were discovered

2 These cases were represented by radiologic densities with no constitutional disturbances and obscure physical signs of pneumonic involvement

3 These findings appear, progress, and resolve completely without any therapy within two months

4 Differentiation from atelectasis, epituberculosis, exudative tuberculosis, and infarcts is difficult, but none of these diagnoses could explain these cases satisfactorily

5 The importance of chest x-ray in general infections (Davidson<sup>9</sup>) and most par-

ticularly in so-called infections of the upper part of the respiratory tract cannot be over-emphasized We are convinced that many cases of lung involvement, now unrecognized, would in this way be discovered

. . .

I wish to thank Dr H R Edwards, Director of the Bureau of Tuberculosis of the Department of Health, City of New York, for his constructive criticism

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### THE MEDICAL SIMILE

*From a critique by S J Perelman in P M*

The sensations one undergoes while reading a movie magazine are like nothing else on earth. They are somewhat akin to inhaling dental gas or being cupped by an inept barber, and yet they suggest eating a banana under the water.

The stifling pressure, the intolerable suspicion

that the brain has burst, and the creeping paralysis of the motor nerves are as marked as though you were suffering an attack of the "bends." For all I know somebody may have invented a decompression chamber to accustom the mind by degrees to movie magazines. There's room for one — J A M A

### Prize Essays

**T**HE Lucien Howe Prize will be open for competition at the next Annual Meeting of the Medical Society of the State of New York, April 28, 1941, in Buffalo. This prize of \$100 will be presented for the best original contribution on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York. The following conditions must be observed:

Essays shall be typewritten or printed and the only means of identification of the author shall be a motto or other device. The essay shall be accompanied by a sealed envelope having on the outside the same motto or device and containing the name and address of the writer.

If the Committee considers that no essay or contribution is worthy of the prize, it will not be awarded.

Any essay that may win the prize automatically becomes the property of the Medical Society of the State of New York "to be published as it may direct."

All essays must be presented no later than February 1, 1941, and sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 292 Madison Avenue, New York.

CHAS GORDON HEYD, M D., *Chairman, Committee on Prize Essays*



FIGS 4 and 5 CASE 15

bronchopneumonic infiltration in the right lung in the region of the fifth and sixth anterior interspaces

He reported to us on June 13, 1939. There was no history of any pneumonia, no infection of the upper part of the respiratory tract, and no sinus infection. There was no cough and no expectoration. No fever and no loss in weight could be elicited. Examination at this time revealed a well-nourished boy, not apparently ill. There were no abnormal chest findings. An x-ray at this time revealed clearing of the affected area. Sputums were negative for tuberculosis.

*Case 19*—H. M., Negress, aged 20, was called into the Central Clinic because a survey x-ray plate in May, 1939, revealed definite infiltration in the left second and third anterior interspaces near the periphery of the lung. Her history revealed no evidence of infection of the upper part of the respiratory tract and no sign of sinus infection. There was no history of pneumonia or tuberculosis. She had lost no weight and felt fine. There were no sweats, no fever, no pain, and no amenorrhea. Examination on June 11, 1939, revealed her to be undernourished but not apparently ill. There were no abnormal physical signs, and an x-ray revealed complete clearing. All sputums were negative for tubercle bacilli.

## Discussion

In order to find the prevalence of this type of "pneumonia," we analyzed a group of 23,465 chest x-rays and reports,\* taken in Lower Harlem Health Center between 1936 and 1938. This group was obtained from a larger series of 65,459 cases that had been x-rayed and studied to determine the prevalence of pulmonary tuberculosis.

\* Statistics taken from records compiled by WPA funds for the Chest Service of the Department of Health of the City of New York.

We found 64 cases of radiologic opacities in this group. They had no constitutional disturbances, no symptoms, and were completely resolved within two months. Fully one-third of these fell in the adult negro group. These cases, we feel, are atypical pneumonias. While this incidence is not great (0.272 per cent), it must be remembered that these cases were discovered accidentally, among so-called "well" people. It is probable that if serial x-rays were taken, especially during seasons when respiratory diseases are common, many more cases might be found.

The differential diagnosis of roentgenologic opacities as described above is quite difficult. Atelectasis, epituberculosis, exudative tuberculosis, infarcts, etc., cannot always be ruled out. Nevertheless, in studying the cases compiled, we feel that none of these diagnoses could satisfactorily explain these cases.

Furthermore, we feel that these cases do not belong under the atypical pneumonias described in textbooks: the abortive type with the acute fever, herpes, cough, and rapid resolution; the asthenic type in old people with little fever and marked constitutional disturbances; the hypostatic type or terminal pneumonia; or even the allergic type with its history of allergy, eosinophilia, and epinephrine response.

It is our opinion that there is a mild type of pneumonia of inconstant etiology occurring in individuals who have mild infections of the upper part of the respiratory tract presenting no constitutional disturbances and that it is discovered only by x-rays of the chest.

This x-ray evidence will present at least a hazy opacity in the lung. At times this may take on the appearance of a mottled fan

TABLE 1—FINDINGS OBTAINED BY THE NEUFELD TECHNIC GROUPED ACCORDING TO AGE OF SPECIMEN

Time Between Collection and Examination	Total Specimens	Specimens Containing Pneumococci		Strains of Pneumococci Identified		Total	Strains Typed by Neufeld Technic—			
		Number	Percentage	Number	Percentage		Direct examination of sputum	Peritoneal exudate from inoculated mouse†	Number	Percentage
One day	221	153	69.2	181	118.3	170	85	50.0	85	50.0
Two days	229	157	68.6	186	118.5	181	98	54.1	83	45.9
Three or more days	50	27	54.0	27	100.0	26	16	61.5	10	38.5
Total	500	337	67.4	394	116.9	377*	199	52.8	178	47.2

\*Seventeen additional strains were not classified

†A few strains were typed by the Neufeld reaction on cultures from heart's blood only

TABLE 2—MONTHLY DISTRIBUTION AND INCIDENCE BY TYPE OF 394 STRAINS OF PNEUMOCOCCI FOUND IN THE STUDY OF 500 SPECIMENS

Type	Oct	Nov	Dec	Jan	Feb	Mar	Total	Percentage
I			1	1	4	2	8	2.0
II			2				2	0.5
III	7	8	8	6	7	5	41	10.4
IV	1	3	1	1		4	10	2.5
V			1	1		1	2	0.5
VI	2	3	6	6		5	22	5.6
VII				1	2	4	7	1.8
VIII	3	3	1	2	7	5	21	5.3
IX		1	1	2	2	3	9	2.3
X	1	5	2	2	2	2	14	3.6
XI	1	1	2	5	4	8	21	5.3
XII	1		1				2	0.5
XIII	3	2	2	3	3	4	17	4.3
XIV			2	1		2	5	1.3
XV	4	4	6	7	1	2	24	6.1
XVI		1	5	2	1	5	14	3.6
XVII		3	3	3	3	3	12	3.0
XVIII	2	2	2	3	2	4	15	3.8
XIX	5	3	6	3	2	10	29	7.4
XX	5	2	2	4	4	4	21	5.3
XXI	2	1	2	1	1	3	10	2.5
XXII			3	2	3	4	12	3.0
XXIII			3	2	3	2	10	2.5
XXIV		1	2	1	4	2	10	2.5
XXV						2	2	0.5
XXVII	1	1		1	1	1	5	1.3
XXVIII		1	2	1	1	2	7	1.8
XXIX	2	2	3	5	2	5	19	4.8
XXXI	3			1	1		5	1.3
XXXII					1		1	0.2
Unclassified	7	2		1	3	4	17	4.3
Grand Total	50	49	68	55	64	98	394	100.0

strains were identified (116.9 per cent)—199 by direct examination and 178 by mouse inoculation. Seventeen strains were unclassified.

The interval between collection and examination of a specimen was of no importance in the success of determining pneumococci when the time was less than two days. When three or more days had elapsed, however, pneumococci were found in fewer specimens, and fewer types were identified. A comparison of the findings by direct examination and by animal inoculation with reference to the age of the specimen is given in Table 1. The data indicate that with older specimens one may expect to find pneumococci

more readily by the direct Neufeld test than by mouse inoculation. Of 181 strains in specimens two days old, 98 were typed on direct examination and 83 by mouse inoculation, of 26 strains found in specimens three or more days old, 16 were typed on direct examination and only 10 by mouse inoculation.

*Incidence by Serologic Type*—The incidence, in order of frequency, by serologic type of the 377 strains identified was as follows: types III, XIX, XV, VI, VIII, XI, XX, XXIX, XIII, XVIII, X, XVI, XVII, XXII, IV, XXI, XXIII, XXIV, IX, I, VII, XXVIII, XIV, XXVII, XXXI, II, V, XII, XXV, and XXXII. Seventeen additional strains were unclassified.

# THE INCIDENCE OF TYPES OF PNEUMOCOCCI IN SPUTUM FROM PATIENTS WITH RESPIRATORY INFECTIONS OTHER THAN PNEUMONIA

ILIE ARDELEAN, M D , Cluj, Rumania

DATA in regard to the types of pneumococci that are harbored by various groups of individuals are of importance as a basis for evaluating the significance of laboratory findings in the study of specimens from patients with pneumonia. With this in mind, a survey was undertaken of specimens of sputum submitted to be examined for tubercle bacilli from individuals with respiratory infections other than pneumonia. The purpose of the investigation was to add to the data compiled by other workers<sup>1-7</sup> who have attempted to evaluate the etiologic significance of the so-called higher types of pneumococci encountered in the sputum of patients with lobar or bronchopneumonia. Another purpose was to determine whether these higher types of pneumococci have any epidemiologic significance in the pathogenesis of the disease.

## Procedure

During a six-month period (October, 1937, to March, 1938) from four to six specimens were chosen at random from among those received daily in the diagnostic laboratories from various parts of New York State for routine examination for tubercle bacilli. Those in transit for more than two or three days were not considered. Care was taken to include but one specimen from a patient, only first specimens being selected.

From the accompanying history forms, data regarding the clinical condition of the patient were recorded. In nearly all cases, respiratory, subacute, or chronic symptoms and positive physical findings were noted. The physicians' diagnoses were suspected tuberculosis, definite tuberculosis, or "probably not tuberculosis."

The technic was similar to that employed for typing pneumococci in sputum from patients with pneumonia. Each specimen was tested by the Neufeld method with the

thirty types of serum (Cooper<sup>8</sup>) \*. Specimens that failed to show pneumococci by this means and the majority of those in which types were determined were injected intraperitoneally into mice. One milliliter of sputum diluted 1:2 with saline solution was used. All animals that had not died spontaneously within forty-eight hours were chloroformed at this period, and the peritoneal washings were examined by the Neufeld procedure. Cultures on blood-agar plates were prepared from the peritoneal exudate and from the heart's blood of all the mice. Single colonies were fished when the colonial characteristics indicated the presence of more than one type of pneumococcus, the fishings were placed in dextrose-serum broth and tested by the Neufeld reaction after eight hours' incubation. When a reaction was obtained with more than one type of serum, single colonies were isolated in pure culture to determine whether more than one type of pneumococcus was present in the same specimen or whether one strain reacted with two or more types of serum. If no type was identified with the thirty standard types of serum, bile-solubility and inulin-fermentation tests were made before any microorganism was considered an unclassified strain of pneumococcus. No attempt was made to isolate and type pneumococci by culturing the sputum on blood-agar plates or in Avery's broth.

## Results Obtained in a Study of 500 Specimens

The results obtained in a study of 500 specimens have been analyzed according to findings obtained by the Neufeld method for pneumococcus-type differentiation, the incidence of types and their distribution with relation to epidemiologic data—for example, season, patient's age, and sex, frequency of types in sputum containing tubercle bacilli, multiple types in the same specimen, cross reactions, and unclassified strains.

*Findings Obtained by the Neufeld Method*—Pneumococci were found in 337 specimens (67.4 per cent). From these specimens 394

Presented at the meeting of the New York State Association of Public Health Laboratories, Cooperstown, May 23, 1938.

From the Division of Laboratories and Research, New York State Department of Health, Albany.

Rockefeller Fellow, Institute of Hygiene, Cluj, Rumania.

\* Types XXVI and XXX are considered closely related to or identical with types VI and XV respectively.

TABLE 1—FINDINGS OBTAINED BY THE NEUFELD TECHNIC GROUPED ACCORDING TO AGE OF SPECIMEN

Time Between Collection and Examination	Total Specimens	Specimens Containing Pneumococci		Strains of Pneumococci Identified		Total	Strains Typed by Neufeld Technic— Direct examination of sputum from inoculated mouse†			
		Number	Percentage	Number	Percentage		Number	Percentage	Number	Percentage
One day	221	153	69.2	181	118.3	170	85	50.0	85	50.0
Two days	229	157	68.6	186	118.5	181	98	54.1	83	45.9
Three or more days	50	27	54.0	27	100.0	26	16	61.5	10	38.5
Total	500	337	67.4	394	116.9	377*	199	52.8	178	47.2

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III	7	8	8	6	7	5	41	10.4
IV	1	3	1	1		4	10	2.5
V				1			2	0.5
VI	2	3	6	6		5	22	5.6
VII				1	2	4	7	1.8
VIII	3	3	1	2	7	5	21	5.3
IX		1	1	2	2	3	9	2.3
X	1	5	2	2	2	2	14	3.6
XI	1	1	2	5	4	8	21	5.3
XII	1		1				2	0.5
XIII	3	2	2	3	3	4	17	4.3
XIV			2	1		2	5	1.3
XV	4	4	6	7	1	2	24	6.1
XVI		1	5	2	1	5	14	3.6
XVII		3	3		3	3	12	3.0
XVIII	2	2	2	3	2	4	15	3.8
XIX	5	3	6	3	2	10	29	7.4
XX	5	2	2	4	4	4	21	5.3
XXI	2	1	2	1	1	3	10	2.6
XXII			3	2	3	4	12	3.0
XXIII			3	2	3	2	10	2.6
XXIV		1	2	1	4	2	10	2.6
XXV						2	2	0.5
XXVII	1	1		1	1	1	5	1.3
XXVIII		1	2	1	1	2	7	1.8
XXIX	2	2	3	5	2	5	19	4.8
XXXI	3			1	1		5	1.3
XXXII					1		1	0.2
Unclassified	7	2		1	3	4	17	4.3
Grand Total	50	49	68	65	64	98	394	100.0

strains were identified (116.9 per cent)—199 by direct examination and 178 by mouse inoculation. Seventeen strains were unclassified.

The interval between collection and examination of a specimen was of no importance in the success of determining pneumococci when the time was less than two days. When three or more days had elapsed, however, pneumococci were found in fewer specimens, and fewer types were identified. A comparison of the findings by direct examination and by animal inoculation with reference to the age of the specimen is given in Table 1. The data indicate that with older specimens one may expect to find pneumococci

more readily by the direct Neufeld test than by mouse inoculation. Of 181 strains in specimens two days old, 98 were typed on direct examination and 83 by mouse inoculation, of 26 strains found in specimens three or more days old, 16 were typed on direct examination and only 10 by mouse inoculation.

*Incidence by Serologic Type*—The incidence, in order of frequency, by serologic type of the 377 strains identified was as follows: types III, XIX, XV, VI, VIII, XI, XX, XXIX, XIII, XVIII, X, XVI, XVII, XXII, IV, XXI, XXIII, XXIV, IX, I, VII, XXVIII, XIV, XXVII, XXXI, II, V, XII, XXV, and XXXII. Seventeen additional strains were unclassified.

TABLE 3—DISTRIBUTION ACCORDING TO SEX OF PATIENT, OF 394 STRAINS OF PNEUMOCOCCI FROM 500 SPECIMENS

Specimens Examined	Pneumococci Found		Strains Identified	
	Number	Per-centage	Number	Per-centage
298 Men	221	74.2	268	121.2
202 Women	116	57.4	126	108.6
Total	337	67.4	394	116.9

*Seasonal Variation in Prevalence of Pneumococci*—During the six-month period, the number of specimens in which pneumococci were found varied from month to month. There was a marked increase from a minimum incidence in October (54.5 per cent) to a maximum in March (77.4 per cent). The greatest percentage of strains was found in February, when, in 48 specimens containing pneumococci, 64 strains were identified. The distribution of the types most prevalent in this series was relatively uniform in the various months. The types less frequently identified—I, II, V, VII, XIV, XXIII, XXV, and XXXII—were found in December, January, February, and March (Table 2).

*Distribution of Pneumococci According to Sex of Patients*—The prevalence of pneumococci in specimens from men was higher than in those from women. Not only did the percentage of specimens containing pneumococci differ (74.2 per cent men, 57.4 per cent women) but also the number of strains typed (121.2 per cent against 108.6 per cent) (Table 3).

*Distribution of Types According to Age of Patients*—Since the majority of the patients were adults and relatively few were under 10 to 19 years of age, the distribution of types according to age groups is less significant. Perhaps the fact that types I, II, VII, and XIV occurred only in persons under 49 years

old should be mentioned, because the other types prevailed with more or less fluctuation through all age groups.

*Distribution of Types in Specimens Containing Tubercle Bacilli*—Tubercle bacilli were found in 66 (13.2 per cent) of 500 specimens examined by the Ziehl-Neelsen stain. In 34 of these specimens, 42 strains of pneumococci were identified, the incidence of types was in general the same as in the entire series.

*Multiple Pneumococcus Types*—More than one type occurred in 50 or 14.8 per cent of the specimens in which pneumococci were found, in 44 specimens, two different types were identified, in 5, three, and in 1, four. The 107 strains are listed in Table 4 according to their distribution in the specimens.

*Cross Reactions*—Forty strains (10.2 per cent) were found to give a reaction either by a *Quellungsreaktion* or agglutination with two types of serum. The number of such strains and types, as well as the reaction obtained, is illustrated in Table 5. The importance of this problem is more than theoretic.

*Unclassified Strains*—Of 394 strains of pneumococci identified, 17 did not react with the standard types of serum, although 12 of them were found to agglutinate in serums produced from 3 unclassified strains isolated previously—7 with one, 3 with a second, and 2 with a third. In addition to the 12 strains identified with the serums mentioned, 5 strains remain unclassified, which in the total strains represent a percentage of 1.3.

## Discussion

Although the incidence of various types of pneumococci in lobar pneumonia varies from year to year,<sup>3,5</sup> nevertheless, each type may hold a fairly uniform position in order of

TABLE 4—FREQUENCY AND DISTRIBUTION OF 107 TYPES OF PNEUMOCOCCI IN 50 SPECIMENS WITH MULTIPLE TYPES

Types		Types		Types			
III—	IV	VIII—	XIII	XVII—XXII			
	V		X				
	VI		XV	XXI—{X			
	VIII		XXI	XXII			
	IX		XXII	XXII— Unclassified			
	X		XXIII	XXIII— Unclassified			
	XV (2 specimens)	XXVII Unclassified					
	XVI	XV—	XVII	IV— XIII			
	XXI		XX	XIV—{ XVII			
	XI, XVI	XX—	Unclassified	XIX—{ X			
AI, XX	VI, XXIII		I—{ XVIII				
XI—	XX—	IX	XX				
		XX—					
		XXVIII					
		XIX—	IV	V—XXVIII			
			VI	VII— XX			
	XIII						
	XVII		XVII—XXXI				
	XXIX						
	XIV						
	XV						
	XVII						
	XXIII						
	XXIX						
	VIII, XXV						
	XVI, XXIX						

frequency. Thus, from the consistent results of Finland<sup>3</sup> and Bullock and Wilcox,<sup>4</sup> Lord and Heffron<sup>5</sup> reached the conclusion that types I, III, II, V, VIII, VII, IV, XIV, IX, and XVIII were, in the order named, the most common types encountered as incitants of lobar pneumonia in adults. Of these, types III, VIII, XVIII, IV, and IX prevail also in a significant percentage in the nasopharynx of carriers<sup>6,10</sup> and of individuals with respiratory infections other than pneumonia.<sup>2,6</sup> Consequently, little epidemiologic importance can be attributed to the last types mentioned. The results obtained in the present survey are in agreement with the classification of pneumococci in specimens from normal persons, since in the frequency range of the thirty types, type I is twentieth, type III, first, type II, twenty-sixth, type V, twenty-seventh, type VIII, fifth, type VII, twenty-first, type IV, fifteenth, type XIV, twenty-third, type IX, nineteenth, and type XVIII, tenth. Furthermore, types I, II, V, VII, and XIV were found in those months in which the incidence of lobar pneumonia is highest.

Difference in the prevalence of pneumococci in the throats of healthy people according to sex is mentioned Gundel and Okura<sup>11</sup> found much more frequent occurrence of these bacteria in boys than in girls. In groups of men, Powell, Atwater, and Felton<sup>12</sup> encountered pneumococci in 66 and 67 per cent of the individuals studied and 53 per cent in groups of women. Too much importance cannot be placed on this difference, however, as an explanation of the much higher incidence of pneumonia in men than in women.<sup>13</sup>

The difficulty that arises when more than one type is recovered from the sputum of individuals with lobar pneumonia is evident. Andrews<sup>4</sup> found more than one type in the throats of half of the children with lobar pneumonia—an incidence far higher than Finland reported for adults.<sup>14</sup>

Problems presented by cross reactions due to the serum used for typing in the Neufeld or agglutination tests can be eliminated to a certain extent by determining the *Quellungsreaktion* and agglutination titer of serum against the homologous type—that is, by testing the serum adequately for such reactions before it is used in diagnostic examinations. When the cross reaction results from an antigenic relationship of some of the types—for example, types III and VIII, II and V—the demonstration of such a relationship might aid in estimating the etiologic significance

TABLE 5—STRAINS OF PNEUMOCOCCI THAT REACTED WITH HETEROLOGOUS TYPES OF ANTIPNEUMOCOCCUS SERUMS

Number of Strains	Type	Serum	Reaction	
			Agglutination	Neufeld
3	III	VIII	2	1
1	VIII	VII	1	
1	VIII	XIV	1	
1	VIII	XIX	1	
1	VIII	XXIII		1
2	X	XXI		2
2	X	XXIX	1	1
5	XI	XVI		5
1	XI	XXV	1	
1	XII	XXII		1
1	XV	VII		1
1	XV	XVII		1
1	XV	XXIII		1
1	XV	XXVIII		1
2	XVIII	XV		2
1	XVIII	XIX	1	
1	XIX	XVI		1
3	XX	XII		3
1	XX	XXIV		1
1	XXII	XII	1	
1	XXII	XVII		1
1	XXII	XVIII		1
2	XXIV	VII	1	1
1	XXIV	XX		1
1	XXVIII	XV		1
1	XXIX	X	1	
1	XXIX	XII	1	
1	XXIX	XXXI		1

of the types and be of value in the study of the antigenic properties of the pneumococcus.

### Summary

A survey was undertaken during a six-month period (October, 1937, to March, 1938) of the prevalence and distribution of the types of pneumococci in sputum submitted to be examined for tubercle bacilli, the Neufeld method was used for the type differentiation.

In 337 (67.4 per cent) of 500 specimens studied, 394 (116.9 per cent) strains of pneumococci were identified—199 on direct examination and 178 by mouse inoculation.

The time interval between collection and examination of the specimens was of no importance in the success of determining pneumococci when the time was one or two days, when three or more days elapsed, fewer were typed.

The incidence of types in order of frequency was III, XIX, XV, VI, VIII, XI, XX, XXIX, XIII, XVIII, X, XVI, XVII, XXII, IV, XXI, XXIII, XXIV, IX, I, VII, XXVIII, XIV, XXVII, XXXI, II, V, XII, XXV, and XXXII.

Seventeen strains did not react with the

standard types of serum Twelve of them were found to agglutinate in serums from 3 unclassified strains isolated previously

The seasonal incidence of pneumococci varied markedly from a minimum in October to a maximum in February and March Types I, II, V, VII, XIV, XXIII, XXV, and XXXII were found in the months of December, January, February, and March

The prevalence of pneumococci was higher in men than in women

The distribution of various types according to age groups was more or less uniform, with the possible exception of types I, II, VII, and XIV, which were found only in patients under 49 years of age

In specimens containing tubercle bacilli the incidence of types was relatively the same as in the entire series

Multiple pneumococcus types occurred in 14.8 per cent of the specimens in which pneumococci were found

Some of the strains (10.2 per cent) reacted with varying intensity with two types of serum

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## INTELLECTUAL GLANDS OF ANTIQUITY

Behold the mighty dinosaur,  
Famous in prehistoric lore,  
Not only for his weight and strength  
But for his intellectual length  
You will observe by these remains  
The creature had two sets of brains,  
One in his head, the usual place,  
The other at his spinal base.  
Thus he could reason a priori,  
As well as posteriori,  
No problem bothered him a bit,  
He made both head and tail of it.  
So wise he was, so wise and solemn,  
Each thought filled just a spinal column,  
If one brain found the pressure strong,  
It passed a few ideas along  
If something slipped his forward mind,  
It was rescued by the one behind,  
And if in error he was caught,  
He had a saving afterthought  
As he thought twice before he spoke,  
He had no judgment to revoke,  
And he could think without congestion  
Upon both sides of any question  
O gaze upon this model beast—  
Defunct ten million years at least

—Colorado School of Mines Magazine

## THE WAR AND DRUG SUPPLIES

The Netherlands, the Netherlands colonies, and Belgium are important sources of drugs used in all countries, the supply of which is now cut off or reduced. The most important drug to be affected is quinine, for its world market is controlled from Amsterdam and more than 95 per cent of the cinchona bark used in its production comes from the Netherlands island of Java. Fortunately it seems that ample reserves of the alkaloid are in the military stores of the Allies and sufficient for civilian needs are warehoused in England, says a London letter in the *J. A. M. A.* The market for caffeine and theobromine is also dominated by Netherlands production, the former is extracted from tea and coffee waste and the latter from cocoa husk. A byproduct of the manufacture of cocoa, cacao butter, is also an important commodity of Netherlands commerce. So also are the oils of caraway seed and nutmeg and gum benzoin, of which the tree *Styrax benzoin* grows in Sumatra. The best variety of aloes is produced in Netherlands islands.

In Belgium many vegetable drugs, such as valerian and dandelion roots, marshmallow, and henbane, are cultivated. Now of course this source also is affected.

## THE ROOT OF WISDOM

"To know when one does not know is best  
To think one knows when one does not know is a dire disease.

Only he who recognizes this disease as a disease  
Can cure himself of the disease

The Sage's way of curing disease

Also consists in making people recognize their diseases as diseases and thus ceasing to be diseased"—*Tao Te Ching*, quoted in *Current Medical Digest*

## MEDICINE CAN NEVER BE A TRADE

"Charity is the eminent virtue of the medical profession. Show me the garret or the cellar which its messengers do not penetrate, tell me of the pestilence which its heroes have not braved in their errands of mercy, name to me the practitioner who is not ready to be the servant of servants in the case of humanity and whose footsteps you will find in the path of every haunt of stricken humanity"—*Oliver Wendell Holmes*

# SUBACUTE BACTERIAL ENDOCARDITIS

## Treatment with Sulfapyridine and Intravenous Injections of Typhoparatyphoid Vaccine

HARRY A. SOLOMON, M D, New York City

IN THE light of clinical experience it is evident that the treatment of subacute bacterial endocarditis with the sulfonamides alone has been disappointing.<sup>1,2,3</sup> The improvement in the general condition of the patient which often follows the administration of the drug is of short duration, and in those cases that have recovered following this chemotherapy (an infrequent but nevertheless significant occurrence) the infection was mild or the treatment was instituted early in the course of the disease.<sup>4,5</sup> That a condition in which the nidus of bacterial infection is protected from the influence of the circulating blood by a fibrin-platelet capsule favorable to bacterial growth should prove resistant to any form of chemotherapy is quite understandable. To overcome this difficulty of a protective barrier around the bacterial nidus, a method of therapy that combines heparin and sulfapyridine has been recommended.<sup>6</sup>

Since the excellent report of White and Parker<sup>7</sup> wherein by a series of noteworthy experiments it was conclusively demonstrated that *in vitro* at temperatures above 39 C for three hours or longer the effect of sulfanilamide on various strains of hemolytic streptococci changed from inhibition to sterilization, we employed combined sulfonamide chemotherapy with protein shock therapy produced by the injection intravenously of typhoparatyphoid vaccine with gratifying results. Persistent cases of infectious arthritis, suppurative bronchitis and pneumonitis, etc., which did not respond to either chemotherapy or intravenous injections of typhoparatyphoid vaccine alone, promptly cleared when the two methods of treatment were used together. The purpose of this communication is to make a preliminary report of the results obtained in 8 cases of subacute bacterial endocarditis treated by this combined method of therapy.

### Case Reports

**Case 1**—N L. was admitted to the Medical Service of Beth David Hospital, Dr. Louis

Presented at the meeting of the Beth David Hospital Clinical Society May 20 1940

From the Medical Service and Laboratories of Beth David Hospital. Consulting physician U S Marine Hospital, Stapleton, Staten Island

Hauswirth, Director, on November 22, 1938

Two weeks before admission she had developed a "grippe" infection with fever, nausea, vomiting, headache, anorexia, and fleeting pains in the joints. Ten days before admission she had had a severe chill followed by high fever, which had persisted, together with severe pains in back of the head, lower spine, and chest, as well as shortness of breath and marked weakness.

At the age of 9 she had had chorea, and at the age of 12 she had been bedfast with rheumatic fever for five months.

The patient was a 19-year-old white girl appearing acutely ill with fever and slight dyspnea and cyanosis. There was a petechial hemorrhage in the right lower conjunctival sac. Over her back, arms, and chest anteriorly, crops of small petechiae were noted. The pharynx was congested, the teeth were in good condition, and the lungs were clear.

The heart was slightly enlarged to the left. A presystolic thrill and double murmur were present over the mitral area. The pulmonic second was accentuated, the rhythm, regular.

The edge of the liver was two fingers breadth below the costal margin and that of the spleen palpable one finger breadth below the ribs. Painful, discolored, indurated spots were present on the distal pads of several fingers and one toe. There was no edema or neuro-organic signs.

**Laboratory Data**—The temperature was 101 F, pulse, 100, respiratory rate, 20, blood pressure, 110/75. An analysis of the urine showed a trace of albumin, 3-5 red blood cells per high power field, and specific gravity 1.010. An analysis of the blood showed a hemoglobin of 80 per cent, red blood cells, 4,200,000, white blood cells, 27,800, polymorphonuclears, 75 per cent, lymphocytes, 23 per cent, monocytes, 2 per cent. Urea nitrogen was 16 mg, creatinine was 1.6 mg, and blood sugar was 155 mg. The blood culture showed many colonies of *Streptococcus viridans*.

The clinical picture of *Str. viridans* endocarditis engrafted upon rheumatic heart disease was probably of less than three weeks' duration. The temperature continued to spike to 103 F until sulfanilamide was started on the fourth day of admission when it remained around 100 F. On the sixth day of admission an intravenous injection of 0.5 minum of typhoparatyphoid vaccine was given which produced a rise in temperature to 104.5 F for several hours. Similar injections of the vaccine were given on the two subsequent days, after which the vaccine was stopped for two days but the sulfanilamide

continued Two more injections of vaccine were given, but the sulfanilamide was continued for a total of two weeks in doses of 1 Gm every four hours

All signs of infection subsided following the week of combined chemotherapy and foreign protein therapy The anemia increased during the two weeks of active treatment but improved rapidly with the discontinuance of sulfanilamide and the help of transfusions Repeated blood cultures have all been sterile The patient has been repeatedly examined and found to be free from any indication of active endocarditis, bacterial or otherwise There are no signs of a "bacteria-free" stage of subacute bacterial endocarditis, and her general condition has been consistently normal now for over one and a half years

*Case 2*—J M, a 40-year-old white unemployed ambulance driver, was admitted to the Medical Service of Beth David Hospital on February 7, 1939, complaining of shortness of breath, fever, sweats, weight loss, and weakness of two months' duration Two weeks before admission many large joints had become tender, and one day before admission he had suddenly developed weakness of the right arm and leg and difficulty in speech

At the age of 10 he had suffered from rheumatic fever, and between the years of 1919 and 1934 he had been bedridden on several occasions with polyarthritis for from three to six months at a time Since 1934 he had noticed dyspnea and palpitation on exertion

The patient presented the wasted, toxic appearance of chronic sepsis There were several petechiae in both lower conjunctival fornices, and the sclera was slightly icteroid The heart was enlarged to the left Double aortic and double mitral murmurs were present A few moist rales were heard over the right infra-scapular region The liver edge was two fingers breadth below the costal margin, and the rounded edge of a firm spleen was easily palpable Besides a few scattered petechiae on the arms there was a splinter hemorrhage beneath the nail of the fourth finger of the right hand Cluhhing of the fingers was also noted

*Laboratory Data*—The temperature was 103.8 F, pulse, 110, respiratory rate, 24, blood pressure, 140/80 A urine analysis showed a trace of albumin, moderate white blood cells, occasional red blood cells, and specific gravity 1.024 The blood count showed a hemoglobin of 11.8 Gm, red blood cells, 4,100,000, white blood cells, 16,900, polymorphonuclears, 90 per cent (30 per cent nonsegmented), lymphocytes, 10 per cent The urea nitrogen was 11.7 mg, the creatinine 1.3 mg, the uric acid, 3.1 mg, icterus index 3.1 The blood culture was positive in forty-eight hours and showed eight colonies per cubic centimeter, gram-positive cocci in short chains, and nonhemolytic streptococci

Sulfanilamide therapy was instituted on the

fifth day of admission, starting with 2 Gm every four hours for six doses and afterward 1 Gm every four hours After twenty-four hours of sulfanilamide therapy, intravenous triple typhoid vaccine was given every evening for seven days The temperature was maintained over 105 F for three hours or longer with each daily course of protein shock therapy and usually returned to normal during the rest of the day Chemotherapy was stopped after ten days of uninterrupted administration

The general well-being of the patient improved rapidly, all signs of infection subsided, weight increased, and the patient left the hospital apparently well on March 21, 1939, after four weeks of normal temperature

*Case 3*—J C, a 27-year-old single white girl, housewife by occupation, entered Beth David Hospital on October 7, 1939 Shortly after the extraction of several teeth in April, 1939, she had noticed increasing weakness, anorexia, chills, sweats, and loss of weight Six weeks before she had been operated upon for appendicitis She had continued to grow weaker, various joints became painful without swelling, and during the past two weeks there had been episodes of sharp pain in the left lower chest. Of significance in the past history was an attack of "rheumatism" in childhood

The patient appeared very ill, toxic, and pale Two elliptic hemorrhages with white centers were present in the retina of the left eye The heart was enlarged to the left, the apex being outside the midclavicular line in the fifth intercostal space A systolic murmur transmitted to the axilla was present over the mitral area Over the aortic valve area there was a rough systolic murmur and a soft diastolic murmur The liver was enlarged two fingers breadth downward, and the edge of the spleen was felt at the costal margin on inspiration

*Laboratory Data*—The temperature was 104.6, pulse, 116, respiratory rate, 24, blood pressure, 110/80 An analysis of the urine revealed a few white blood cells and specific gravity 1.014 The blood count showed a hemoglobin of 49 per cent, red blood cells, 2,480,000, white blood cells, 8,700, polymorphonuclears, 70 per cent (16 per cent nonsegmented) Three daily blood cultures were positive for *Str. viridans* averaging over twenty colonies per cubic centimeter of blood

After six days, during which time the signs of infection were essentially unchanged, sulfapyridine was administered, first in 2-Gm doses every four hours for one day and then a 1-Gm dose every four hours The temperature remained normal under chemotherapy for forty-eight hours, and on the third day triple typhoid vaccine therapy was instituted By this means the temperature was kept elevated from 105 to 106 F for three hours every night for seven paroxysms, and then both chemotherapy and protein shock therapy were discontinued

The sulfapyridine concentration of the blood varied from 125 to 4 mg per hundred cubic centimeters. The white blood count averaged 18,000 for the first five days of treatment, but on the tenth day the white count dropped to 2,000. Following discontinuation of the combined treatment, the general condition of the patient was strikingly improved, the temperature remained normal, and repeated blood cultures were sterile. The patient left the hospital four weeks after admission in what appeared to be excellent health.

She was readmitted one week later seriously ill with agranulocytosis. She had received sulfanilamide at home for a sore throat which she presumably contracted from a member of her family. She died three days after her second admission of agranulocytosis, but intensive clinical and bacteriologic study revealed no evidence of the original infection. Permission for an autopsy could not be obtained.

*Case 4*—N. R., a 41-year-old dentist, was referred to Beth David Hospital by Dr. George Cole on August 31, 1939. About six months prior to admission he had noticed increasing difficulty in carrying on his work because of weakness, listlessness, and fleeting joint pains and, since an attack of "grippe" one month later, he was practically bedridden. The "rheumatic pains" had increased, weakness had become more marked, bouts of fever had been frequent, and weight loss had progressed. About two weeks before admission, difficulty in speech had developed suddenly. There was no history of rheumatic fever. Seventeen years ago he had had a "breakdown due to overwork." He had had a number of gallbladder attacks, and there had been x-ray evidence of calculi in the gallbladder. Left-sided calculous pyelonephritis with hypertension had also been known to be present for the past four years. The tonsils had been removed three years before because of recurrent sore throat episodes.

The general appearance was that of an adult white man with a very sallow complexion, apathetic, toxic, and emaciated. Slight dysarthria and weakness of the lower part of right side of the face was present. Petechial hemorrhages were present in the folds of both lower conjunctival sacs, and Roth spots were present in both retinas. The teeth were in good condition and the lung signs were normal. A few scattered petechiae were present over the upper part of the chest.

The heart was rapid and regular. The apex beat was in the sixth space outside the mid-clavicular line. A loud systolic blowing murmur over the mitral area replaced the first sound and was transmitted to the left.

The abdomen was normal except for the spleen which was just palpable on deep inspiration.

*Laboratory Data*—The temperature was 101.4 F, pulse, 100, respiratory rate, 20, blood pressure, 95/80. A urine analysis showed a

2 plus albumin, a few red and white blood cells, and specific gravity 1.018. The blood count showed a hemoglobin of 51 per cent, red blood cells, 2,710,000, white blood cells, 6,600, polymorphonuclears, 88 per cent (40 per cent non-segmented), lymphocytes, 10 per cent, monocytes, 2 per cent. The blood cultures were positive for *Str. viridans* on many occasions before admission.

The clinical picture was that of subacute bacterial endocarditis due to *Str. viridans* with at least five months of a severe septic state and serious embolization.

Treatment was begun on the day after admission by giving 2 Gm of sulfapyridine every four hours for six doses and then 1 Gm every four hours thereafter. Thirty-six hours after chemotherapy was started, triple typhoid vaccine was administered intravenously each night for a series of six injections, after which all treatment was stopped because of uncontrollable vomiting. The sulfapyridine concentration of the blood varied from 1.7 to 7 mg per hundred cubic centimeters. The white blood count averaged about 11,000 during the treatment.

For one week after the combined therapy was stopped, the temperature was normal and the general condition of the patient was improved. Signs of infection, however, reappeared but with less severity. Another course of similar therapy for five days was tried one month after the first one, but the control of the general infection was again only of short duration. The patient died of cerebral hemorrhage on December 1, 1939.

An autopsy performed by Dr. Milton Helpern, pathologist of Beth David Hospital, revealed that the vegetations on the mitral valve and endocardium were very extensive and plastered down in a thin, firm, flattened layer.

*Case 5*—A. P., a 19-year-old Italian girl, was referred to Beth David Hospital by Dr. Morris Oken on January 25, 1940. Four weeks before admission she had developed a "grippe" infection as manifested by chills, irregular fever, general aches, and prostration. Sulfanilamide therapy had been tried during the first week of illness, but it did not influence the fever or improve the general condition. The septic state had continued in a severe form. Two days before admission the blood culture was reported positive for *Str. viridans*. Sulfapyridine had been administered for two days at home before the patient was transferred to the hospital.

At the age of 10 the patient had been bedfast for four months with rheumatic polyarthritides and carditis. Despite several operations for removal of tonsils she suffered from frequent throat infections.

The patient appeared acutely ill, poorly nourished, dehydrated, extremely toxic, and pale. There was a fresh petechial hemorrhage in the left conjunctival fold and several painful Osler nodes in the pads of several finger tips and both heels. The teeth and gums were in excellent

condition The pulsations of the neck were prominent and rapid The heart was enlarged downward, and a systolic murmur over the mitral area and a double murmur over the aortic area were present The lungs were clear The edge of the spleen extended one inch below the costal margin

*Laboratory Data*—The temperature was 100.8 F, pulse, 108, respiratory rate, 24, blood pressure, 136/60 Urine analysis showed a trace of albumin, a few white blood cells, and specific gravity 1.019 The blood count showed 3,680,000 red blood cells, white blood cells, 13,800, polymorphonuclears, 80 per cent (nonsegmented 18%), lymphocytes, 18 per cent, monocytes, 2 per cent Sulfapyridine concentration of the blood was 6 mg per hundred cubic centimeters

The patient presented all the clinical and bacteriologic criteria for a diagnosis of subacute bacterial endocarditis due to *Str viridans*. Because she received adequate doses of sulfapyridine for several days before admission, the drug was continued at 1 Gm every four hours, and the intravenous triple typhoid vaccine series was started on the night of the day of admission to the hospital Seven nightly typhoid vaccine series were given, the temperature being maintained from 104.5 to 106 F for over three hours at a time daily Sulfapyridine was continued for only one day after the typhoid vaccine was stopped because of the development of mental symptoms due no doubt to the sulfapyridine In this case sulfapyridine was given for ten days with the concentration of the drug in the blood averaging around 6 mg per hundred cubic centimeters The daily white blood count varied from 30,000 to 16,000, and the polymorphonuclear cells averaged 85 per cent

Since discontinuation of the treatment on the tenth hospital day, the patient has been free from any signs or symptoms of infection Repeated blood cultures are normal, temperature is not elevated, the urine is free from any indication of renal damage, there is no anemia, and her general condition is excellent

*Case 6*—L O, a 22-year-old white man, was referred by Dr Julius Tannenbaum and admitted to the Doctors Hospital, March 14, 1940

His present illness had begun about four months before admission, with malaise, irregular fever, pain and swelling of the joints, and progressive loss of weight He had been in failing health manifested by weakness, loss of weight, anorexia, fleeting joint pains for five months Two months before admission he had developed chills, high fever, drenching sweats, vomiting, and severe pains over spleen and kidney regions He was known to have had a heart murmur since infancy and a duodenal ulcer for the past five years

He had the appearance of a well-developed young man who showed the effects of chronic sepsis—viz, cachexia, pallor, toxemia, and

listlessness Characteristic embolic phenomena were present in large numbers in the retinas and skin, especially in the palms of the hands, soles of the feet, and around the ankles The teeth and gums were well kept

The heart was enlarged transversely Over the base of the heart a loud rough systolic murmur was heard over a wide area An aortic diastolic murmur was also present The lungs were clear The spleen extended two fingers below the costal margin, and its firm rounded edge was tender

The right ankle was swollen, tender, and ecchymotic, the right posterior tibial pulsation was absent There was marked clubbing of the fingers. There were no neuro-organic signs

*Laboratory Data*—The temperature was 105 F, pulse, 126, respiratory rate, 28, blood pressure, 140/40 Urine analysis showed a 2 plus albumin, many red and white blood cells, and specific gravity 1.016 The blood culture showed over twenty-five colonies of *Str viridans* per cubic centimeter of blood

This severe and long standing case of *Str viridans* endocarditis was probably engrafted upon a congenital type of heart disease with an interventricular septum defect

Treatment was instituted as in the previous cases with sulfapyridine, and one day later intravenous triple typhoid vaccine injections were started Only six series of vaccine injections could be given because of uncontrollable vomiting and hematemesis

For eight days after the continued therapy was stopped the temperature remained normal, and the general condition of the patient improved greatly Later, however, signs of infection reappeared, and it became evident both clinically and bacteriologically that the infection had recurred, although on a lower level of activity

*Case 7*—E S, a 14-year-old white school boy, was referred to the Medical Service of Beth David Hospital by Dr Harry Sherman on March 20, 1940, and discharged May 4, 1940 Three and one-half weeks before admission he had developed a sore throat, high fever, marked weakness, and palpitation After a few days the symptoms had appeared to diminish only to recur with increased intensity

He had had measles and pertussis in infancy At six years of age he had developed scarlet fever which had been followed by acute nephritis with generalized edema and smoky urine These had subsequently cleared entirely He suffered frequent colds and sore throats Five separate operations for diseased recurrent tonsils had been performed, and a left mastoidectomy had been necessary at four years of age

He was a well-developed but thin boy who appeared acutely ill, pale, and septic Pulsations of the neck and precordium were markedly exaggerated Petechial hemorrhages were noted on the palate and floor of the mouth as well as in

crops over both shoulders, chest, and arms. The teeth were not infected.

The heart was enlarged to the left and its rhythm regular. A soft systolic murmur over the apex was transmitted to the axilla, and a low pitched diastolic murmur over the aortic area was transmitted downward. The lungs were clear, the liver edge was palpable, and the spleen was suspiciously palpable at the costal margin. There were a few painful red areas on the toes and heels.

**Laboratory Data**—The temperature was 104 F, pulse, 100, respiratory rate, 24, blood pressure, 135/25. Urine analysis showed a faint trace of albumin, few red and white blood cells, and specific gravity 1.012. The blood count showed a hemoglobin of 7.6 Gm, red blood cells 2,400,000, white blood cells, 15,000, polymorphonuclears, 70 per cent (8 per cent nonsegmented), lymphocytes, 26 per cent, monocytes, 4 per cent. Urea nitrogen was 17 mg, creatinine, 1.6 mg, blood sugar, 110 mg. The blood culture was positive after twenty-four hours' incubation and revealed fifteen colonies of *Str. viridans*.

The rather severe manifestations of bacterial endocarditis due to *Str. viridans* were of about one month's duration before treatment was instituted. Six grams of sulfapyridine were administered per os during the twenty-four hours before triple typhoid vaccine was injected intravenously. Temperature over 105 F for three hours was maintained once every night for eight nights. On the tenth day after admission both chemotherapy and typhoid vaccine injections were discontinued because the white count, which varied between 24,000 and 31,000, dropped to 3,200 on the ninth day of treatment. The sulfapyridine concentration varied between 10 to 2.8 mg per hundred cubic centimeters.

After treatment was stopped blood cultures taken every three days were all negative. His temperature, blood count, urine, and general condition remain normal to date.

**Case 8**—B. S. entered Beth David Hospital on April 4, 1940, and was discharged May 17, 1940. His present illness had begun six weeks before admission with chilliness, irregular fever to 104 F, pains in back and legs, headache, and malaise. He had been treated at home by his private physician for over three weeks, having received 10 Gm of sulfapyridine during part of the last week of this period. He had been admitted to the Bronx Hospital, New York City, on March 18, 1940, where he had remained for seventeen days. Here his condition had been diagnosed as subacute bacterial endocarditis due to *Str. viridans* as evidenced by a severe septic state, rheumatic heart disease with aortic insufficiency, embolic phenomena, splenomegaly, and positive blood cultures. Sulfanilamide had been given during his stay at this institution without any influence on the infectious state.

Aside from a history of scarlet fever at 9 years of age, the past history was entirely negative.

On examination at Beth David Hospital this 37-year-old white man was extremely septic, wasted, and exhausted. The scleras were distinctly icteric. The teeth were discolored and loose, and the gums were swollen and exuding pus. The heart was enlarged to the sixth intercostal space. A short systolic and a soft low-pitched diastolic murmur were present over the aortic area. The lungs gave no abnormal signs.

The liver was diffusely enlarged almost to the umbilicus, tender, and surface smooth. The edge of the spleen was felt about two inches below the costal margin. There was a splinter hemorrhage under the nail of the right fourth finger, and several discolored painful nodes were present over both insteps and heels.

**Laboratory Data**—The temperature was 103.8 F, pulse, 112, respiratory rate, 22, blood pressure, 110/60. Urine analysis showed a trace of albumin, a few red blood cells, moderate white blood cells, and specific gravity 1.018. The blood count showed a hemoglobin of 9.8 Gm, red blood cells, 3,750,000, white blood cells, 13,350, polymorphonuclears, 80 per cent (12 per cent nonsegmented), lymphocytes, 14 per cent, monocytes, 4 per cent, myelocytes, 2 per cent, reticulocytes, 1 per cent. Urea nitrogen was 12 mg, creatinine, 1.5 mg, uric acid, 3 mg, blood sugar, 120 mg, icterus index 30.

A severe toxic hepatitis, probably due to the chemotherapy, complicated this rather severe case of subacute bacterial endocarditis. Nevertheless, the combined treatment of sulfapyridine and intravenous triple typhoid vaccine was instituted in the usual manner, reinforced by infusions of hypertonic glucose and normal saline solutions. Ten nightly series of vaccine were given over a period of eleven days with three-hour periods of fever ranging from 105 to 107.2 F. Chemotherapy was continued for one week after the vaccine was stopped. Sulfapyridine concentration of the blood varied from 8.8 to 5 mg per hundred cubic centimeters. The white cells varied from 27,000 during the first week of treatment to 9,800 during the second week of treatment.

Blood cultures taken every three days during and following treatment were all sterile. With cessation of the combined treatment the fever remained normal and the general condition improved strikingly. The patient gained over 30 pounds when he left the hospital and has remained in excellent condition.

### Comment

The use of typhoparathyphoid vaccine by intravenous injection has been universally known as a valuable form of treatment in certain resistant forms of infection. It is a safe, economical, and simple method of therapy. Its effectiveness probably depends on

the production of a "shock" reaction, artificial fever, increased circulatory flow with vasodilation, stimulation of cellular (reticulo-endothelial) and glandular activity, increased polymorphonuclear leukocytosis with decreased lymphocytosis, as well as stimulation of other factors in the mechanism of immunity<sup>8</sup>

The sulfonamide group of drugs has, in general, failed as effective therapeutic agents against the infections causing subacute bacterial endocarditis. The mode of action of this form of chemotherapy, while not completely known, is clearly one of bacteriostasis with little or no bactericidal effect.

By combining foreign protein shock therapy with the sulfonamides, the effectiveness of the drug is enhanced not only by the hyperpyrexia produced, which in itself renders the drug bactericidal instead of bacteriostatic, but also by the addition of many factors in immunity, some not clearly understood, which are activated at the same time.

The results obtained by this combined method of therapy in 8 cases of subacute bacterial endocarditis, 7 of which were due to *Str. viridans* and 1 to nonhemolytic streptococcus during the past twenty-one months, has been extremely encouraging. The cases presented adequate criteria for a diagnosis of active bacterial endocarditis including at least one positive blood culture in each case. Five of the cases are well, 1 for eighteen months, 1 for fifteen months, 1 for three months, and 2 for over two months. One patient died of agranulocytosis one month after leaving the hospital but showed no clinical or bacteriologic evidence of a recurrence of the original infection. In 2 cases the treatment failed, although a temporary improvement in the general condition did occur. In one of these unsuccessful cases the infection existed over four months and was probably superimposed on congenital defect of the interventricular septum. In the second unsuccessful case the disease existed over six months and at autopsy showed firm, flat vegetations plastered extensively over the endocardium. As both of these cases had received a great deal of sulfonamide chemotherapy for a long time before the combined form of treatment was instituted, the question of bacterial resistance to the therapeutic agent is suggested. However, Case 8 is illustrative of the fact that the combined therapy may still prove effective even after prolonged sulfonamide therapy alone has failed.

The method of therapy was as follows: sulfapyridine in 2-Gm doses every four hours was given for two doses and then reduced to 1 Gm every four hours. On the night of the second day of sulfapyridine therapy an intravenous injection of 1/2 minm of typhoparatyphoid vaccine was given, and the same dose was repeated in one or two hours if necessary in order to maintain the temperature above 104 F for at least three hours continuously. The vaccine was continued each night for from seven to ten days, the amount of vaccine being increased as required to produce the designated degree and duration of the hyperpyrexia. The injections were given several hours after the last meal of the day so that the reaction of the shock therapy should not interfere with the intake of nourishment. Accessory measures, such as infusions, transfusions, high caloric diet, extra salt and vitamins, sedatives, etc., were all utilized as indicated. Of course, adequate blood and urine examinations to follow the concentration of the drug in the blood and to discover early evidence of toxic effects were carried out routinely. Sulfapyridine was usually given for a week or less after the vaccine therapy was discontinued.

### Summary

In a series of 8 cases of subacute bacterial endocarditis, the results obtained with a method of therapy that employs intravenous injections of typhoparatyphoid vaccine as an adjuvant to sulfapyridine therapy have been favorable. In submitting this preliminary report of a new method of treatment for subacute bacterial endocarditis, the necessity for early recognition and prompt treatment of the disease cannot be too strongly emphasized.

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## BUROW'S SOLUTION

### A New Method of Preparing Liquor Aluminum Acetate (N F)

F C COMBES, M D, New York City

IN A recent review<sup>1</sup> dealing with the value of Burow's solution in diseases of the integument, the several deficiencies of the National Formulary preparation were reviewed. These objectionable features may be briefly stated as follows:

1 Excess lead in the filtrate. According to the *National Formulary*,<sup>2</sup> liquor aluminum acetate is prepared as follows:

Lead acetate	150 Gm
Aluminum sulfate	87 Gm
Water sufficient to make	1,000 cc

The author has previously shown that on a basis of molecular weights, when 150 Gm of lead acetate are used, the amount of aluminum sulfate necessary to precipitate all the lead and achieve molecular equilibrium is 87.84 Gm. If only 87 Gm are used as specified, there is an excess of lead acetate in the finished solution amounting to 1.45 Gm. This is equivalent to 0.079 Gm of lead per hundred cubic centimeters. Routine examinations of samples prepared and dispensed by various pharmacists have shown these figures to be as high as 0.240 Gm per hundred cubic centimeters.

The National Formulary Committee has never specified any restrictions on the lead content. However, the present committee has ruled that, in the future, solutions must pass the following test which will detect lead in amounts in excess of 0.04 Gm per hundred cubic centimeters. One cubic centimeter of dilute sulfuric acid is added to 5 cc of liquor aluminum acetate. There should be no visible precipitate.

To achieve this it is not unreasonable to assume that the pharmacist or manufacturer will add an excess of aluminum sulfate resulting in free sulfates for which there is no assay requirement and which, from a therapeutic standpoint, are as objectionable as the lead.

2 Variations in the hydrogen-ion concentration. Routine tests done on eighteen lots purchased in the market showed variations between pH 3.70 and 4.45.

3 Variations in aluminum acetate content.

From the Department of Dermatology, New York University College of Medicine and the Dermatological Service of the Third (New York University) Medical Division, Bellevue Hospital.

Similar tests showed variations between 4.5 and 5.9 per cent.

4 Lack of stability resulting in precipitation of basic aluminum acetate associated with a decrease in acidity of the solution and in the aluminum acetate content.

5 Frequent irritation of the skin, which is in part responsible for the hesitancy of many physicians to use the National Formulary preparation.

Karl August von Burow proposed the original formula with directions for its preparation as follows:

1	Lead acetate (crystalline)	100 Gm
	Distilled water	300 Gm
2	Alumen	66 Gm
	Sodium sulfate	12 Gm
	Distilled water	500 Gm

The two solutions should be mixed cold, allowed to stand for two days at a temperature of 10 C, and then filtered without washing the precipitate.

Numerous changes have been made in the National Formulary preparation since Burow's solution was first included, but, notwithstanding the superiority of the present preparation, it still does not conform to the requisite that should be demanded of such a valuable medication. The *Deutsches Arznei-Buch*, which in Germany corresponds to our pharmacopoeia, cognizant many years ago of its objectionable features, introduced a substitute for the original Burow's solution in "Essigsäure Tonerde." Sulzberger<sup>3</sup> has said that he "discovered our Burow's solution was often if not inferior in action to the Essigsäure Tonerde, at least much more uncertain and irregular in its effects." It is a reflection on the pharmaceutical profession in this country that many pharmacists in small towns and villages have never heard of Burow's solution, and how often difficulty is encountered in finding a pharmacist who has any available for dispensing purposes. Furthermore, every drug clerk seems to have his own method of preparation.

In search for a solution of aluminum acetate which would be standard, stable, and at the same time free of the objectionable features which stigmatize the National Formulary preparation, the author has examined and

TABLE 1

	New Burow's Solution	Official Burow's No 1	Official Burow's No 2	Official Burow's No 3
Date analyzed	6/4/40	6/4/40	4/24/40	9/19/40
pH	3.9	4.0	4.1	4.3
Specific gravity at 25 C	1.016			
Al <sub>2</sub> O <sub>3</sub>	1.375 Gm per 100 cc	1.36 Gm per 100 cc.	1.27 Gm per 100 cc	1.23 Gm per 100 cc.
Al(OAc) <sub>3</sub>	5.4 Gm. per 100 cc	5.42 Gm. per 100 cc.	5.08 Gm. per 100 cc	4.9 Gm per 100 cc.
Free acid	Trace	Slightly basic	Slightly basic	Slightly basic
Lead (Pb)	None	0.010 Gm. per 100 cc	0.035 Gm. per 100 cc.	0.052 Gm. per 100 cc.
Sulfate	0.0006 Gm per 100 cc	0.256 Gm per 100 cc	0.096 Gm per 100 cc	0.012 Gm. per 100 cc.
H <sub>2</sub> BO <sub>3</sub>	Less than 0.56 Gm per 100 cc	None	None	None

TABLE 2

	Percentage Al <sub>2</sub> O <sub>3</sub>	pH	N/10 NaOH	N/100 NaOH	N/10 Na <sub>2</sub> CO <sub>3</sub>	N/10 HCl	N/100 HCl	N/ HOAc	Maximum Variation
Liquor aluminum acetate (N F)	1.27	4.1	4.5	4.2	4.5	3.8	4.1	3.7	0.8
Liquor aluminum acetate (N F) diluted 1-10	0.127	4.4	11.5	4.7	7.9*	1.7	4.2	3.1	9.8
New Burow's solution	1.37	3.9	4.3	4.0	4.3	3.6	4.0	3.5	0.8
New Burow's solution diluted 1-10	0.137	4.2	10.1	4.4	6.4*	1.6	8.9	3.0	8.5

\* Precipitate

tried several modifications prepared by different methods, including the addition of various stabilizers. A satisfactory solution seems to have been found in one that is prepared without lead and in which boron is added as a stabilizer.

There is no assay requirement for lead and sulfates in the National Formulary preparation. This fact made it necessary to decide upon a certain hypothetical set of standards before attempting to prepare a solution, basically the same. These standards follow:

- 1 It should contain no lead
- 2 Aluminum sulfate should be kept to a minimum
- 3 It should be standard as regards hydrogen-ion concentration and aluminum acetate content
- 4 It should be nonirritating and capable of exerting a buffer action equal or superior to that exhibited by liquor aluminum acetate (N F)
- 5 It should show a minimum amount of precipitation on standing
- 6 If precipitation occurs, it should not appreciably affect the pH or the aluminum acetate content
- 7 It should conform to the National Formulary requirements with regard to its aluminum acetate content

The solution that fills practically all these requirements has been given an extensive clinical trial and has been found equal if not superior to the National Formulary solution in its effects on the skin. The "New Burow's Solution" can be prepared by the manufac-

turer from a stable base that is not made by the precipitation method.

**Physicochemical Properties**—For comparative purposes the new Burow's solution was compared with bulk liquor aluminum acetate (N F) as prepared by three manufacturing chemists (see Table 1).

It will be noted that the physicochemical properties of the new Burow's solution compare favorably with the official solutions. It has the added advantage that no lead is used in its preparation, so that the finished product is free of lead and sulfates except in amounts estimated as less than traces.

**Buffer Action**—One of the major properties of liquor Burowi is its ease of dissociation and its ability to remain in a state of continuous ionization, thus rendering it capable of correcting variations in the pH values of the skin. Comparative tests of this buffer action to equal volumes of standard solutions were made (see Table 2).

It may be seen from this table that the undiluted solution shows the same maximum variation as the National Formulary solution but that the new Burow's solution, diluted with ten volumes of water, shows a maximum variation of pH 1.3 less than the National Formulary solution. Its buffer qualities are, therefore, far superior to this preparation.

**Stability**—One disadvantage of all aluminum acetate solutions is precipitation on standing. This begins at normal temperatures in from two to three months. This precipitate consists of basic aluminum acetate and is associated with a corresponding de-

TABLE 3—VARIATIONS IN ALUMINUM ACETATE CONTENT OVER A PERIOD OF APPROXIMATELY TEN WEEKS

	May 4, 1940	July 22 1940
Percentage Al <sub>2</sub> O <sub>3</sub>	1 37%	1 34%
Total caustic soda titration as acetic acid	4 84%	4 78%
pH value	3 9	4 0
pH value diluted to 10 per cent with water	4 2	4 2
Aluminum acetate	5 4%	5 3%

crease in potential acidity. Several samples have shown variations over a three-month period ranging up to pH 1. The new Burow's solution showed a variation of 0.1, decreasing from pH 3.9 to 4.0. In addition there was no appreciable change in the aluminum acetate content or in its buffer action (see Tables 3 and 4).

**Clinical Tests and the Reaction of Normal Skin**—Fifty-two subjects were patch tested with the solution diluted with ten volumes of water with no reaction after forty-eight hours.

Twenty-five subjects were patch tested with the solution undiluted. None showed any reaction after forty-eight hours.

**Effect on Inflamed Skin**—Fifty patients presenting various dermatologic and surgical conditions were treated with the solution as a wet compress. It was found that the best results followed the use of dilutions of 1-20 with water. Within certain limits dilution increases the buffer action and does not appreciably disturb the hydrogen-ion concentration. Conditions responding favorably included the following: dermatitis venenata (contact dermatitis due to various mechanical, thermal, chemical, and plant irritants), urticaria, cellulitis, insect bites, cutaneous abrasions, abscesses and carbuncles, ecthyma, pompholyx, acute dermatophytosis, vesicular and bullous microbids, paronychia

TABLE 4—VARIATIONS IN BUFFER ACTION OVER A PERIOD OF APPROXIMATELY TEN WEEKS

	—May 4, 1940—		—July 22 1940—	
	Un- diluted	Diluted	Un- diluted	Diluted
N/10 NaOH	4 3	10 1	4 4	9 0
N/100 NaOH	4 0	4 4	4 1	4 8
N/10 Na <sub>2</sub> CO <sub>3</sub>	4 3	6 4*	4 3	6 3*
N/10 HCl	3 6	1 6	3 8	1 7
N/100 HCl	4 0	3 9	4 0	4 2
N/ Acetic	3 5	3 0	3 5	2 9

\* Precipitate

The dilutions were made to 10 per cent with distilled water.

The buffering action with alkalies and acids is shown by the pH values of equal volumes of test solutions and alkalies and acids.

(acute), erysipelas, balanitis and chancroid, lymphangitis, syccosis vulgaris, suppurating lymphadenitis, and conjunctivitis.

In many instances it was possible to compare the new Burow's with the official solution by applying them, respectively, to different portions of the inflamed integument on the same subject, i.e., either leg or either hand. There was no visible subjective or objective difference in their effect, although several patients volunteered that the new solution felt more comfortable.

### Summary

A new Burow's solution is recommended which conforms to the assay requirements of the *National Formulary*. It is superior to the old preparation in many of its clinical and therapeutic properties, especially in that it contains no free lead and only a faint trace of sulfates and is superior as a buffer solution. For therapy it is diluted 1-20 or more with water.

### References

1. Combes, Frank C. *New York State J. Med.* 40: 37 (Jan. 1) 1940.
2. *National Formulary*, ed. 8. Washington, D. C., Amer. Pharm. Assoc., 1935, p. 216.
3. Sulzberger, Marion B. In discussion on Combes.

### HELPFUL BOOKLET ON GONORRHEA

The United States Public Health Service is distributing a new booklet entitled "20 Questions on Gonorrhea." It was developed with the active assistance of officers and members of the Neisserian Medical Society, is written in layman's language, and will be valuable to the physician who wants to know how to tell the story of

gonorrhea in nontechnical terms. It could be a valuable aid to the physician to give to his patients. The booklet is illustrated with schematic anatomic drawings and is available from the Superintendent of Documents, Washington, D. C., for five cents per copy and with a 25 per cent reduction on orders of 100 or more.

### SOMEBODY QUITE DIFFERENT

Dr. Hugh Cabot would have us plunge into group practice, divided responsibilities, buck passing, and all, because we are such an immoral group of individuals without principle or high

standards! Boston still may be the home of the bean and the cod, but the Cabots no longer show evidence of talking only with God.—*J. Connecticut Med. Soc.*

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**Stability**—One disadvantage of all aluminum acetate solutions is precipitation on standing. This begins at normal temperatures in from two to three months. This precipitate consists of basic aluminum acetate and is associated with a corresponding de-

of the liver, distention of the jugular veins, and increase in venous pressure suggest that congestive heart failure has occurred. In that case I think the treatment should be immediate and drastic, and it is our practice to use ouabain, intravenously, in a dose of 0.5 mg at first and perhaps a dose of 0.3 mg after four or six hours. Usually on the second and third day after the onset there is no need for further digitalization. If there is, give digitals by mouth in doses of usually six cat units the first day and then, depending upon the patient's condition, three cat units daily for the next few days.

In an analysis recently made of our first 100 patients with this disease, only 1 had acute cardiac decompensation. It does not, therefore, present a very frequent therapeutic problem.

Convulsive seizures, occasionally with coma, which sometimes occur at the onset of the disease, are probably due to increased intracranial pressure. It may be due to cerebral vascular spasm and edema of the brain. The treatment is important because many of the deaths, the sudden deaths, which occur in the acute stage of the disease are related to some encephalopathic manifestation—coma or repeated convulsive seizures. It is extremely difficult to evaluate therapy, because even these encephalopathic manifestations tend to correct themselves and they rarely continue longer than the first twenty-four or thirty-six hours after the onset. Magnesium sulfate, intravenously, appears to be of some value. It is our practice to give 4 cc of a 50 per cent solution intravenously and repeat in two or three hours if the convulsive seizure recurs. When there is coma, spinal tap should be done. The coma also tends to correct itself, but one hesitates to allow it to continue. We have seen patients come out of coma very promptly after a slow drip spinal tap. Never do we allow the fluid to run out fast.

Anuria is another manifestation of the disease which calls for treatment. Anuria is not a common complication and, when it occurs, rarely lasts for more than forty-eight hours. Anuria that proves fatal is usually that type which develops later in the disease—that is, a recurrence in the second and third weeks. Anuria at the onset, however, is a short-lived process, accompanied usually by stupor, symptoms of uremia, and nitrogenous retention. It is an advantage to get the urine to flow, but I do not know of any treatment that insures that result.

Renal decapsulation has been suggested

It is now done much less frequently than it was fifteen or twenty years ago. Because the anuria tends to correct itself spontaneously, one is never certain that the operation has made the difference. Short-wave diathermy and other forms of local application of heat have been tried with results that are not convincing. Hypertonic infusions, sucrose and now perhaps mannitol and dulcitol, and 50 per cent glucose solutions have been tried and, it seems to me, without any rational background. If the mechanism of anuria is due to deficient blood flow through the glomeruli, which it probably is, it is hard to see how any kind of a solution, even a hypertonic solution, would correct that functional disturbance.

The occurrence of uremia in acute diffuse glomerulonephritis at its onset is not a serious manifestation as far as the outcome is concerned. Young patients with this disease in a stage in which there is fixation of the specific gravity of the urine and extremely high non-protein nitrogen in the blood make a complete recovery in about the same time as those in whom uremia is not an initial feature. The symptoms are sometimes alarming. Treatment is mostly empirical, with infusions of hypertonic solutions. Acidosis and dyspnea that may result from the retention of acid phosphate and other acid products may sometimes be corrected at least temporarily by the intravenous infusion of sodium bicarbonate and normal saline.

Among the less important symptoms is edema. I say less important because it does not matter very much in this disease whether one corrects the edema or not. I think it is more important to do what one can to prevent the edema from progressing. There is no diuretic mechanism with which I am familiar that will correct the edema of acute diffuse glomerulonephritis. Presumably this disease is a diffuse vascular inflammation in which the vascular system of the kidney is merely incidentally involved, and the edema most likely is due to the increased capillary permeability in the area injured by the hemolytic streptococcal toxin. Since we know of no means of reducing the permeability of capillaries under these conditions, no measures can be directed toward that mechanism. Restriction of sodium is of some value. There appears to be no necessity, from a physiologic point of view, for the limitation of fluids, since with restriction of sodium the fluids taken in are excreted. In fact, Volhard at one time suggested as the treatment for the edema the ingestion of 1,500 cc of water, after

# Therapeutics

## CONFERENCES ON THERAPY

THE first of this series appeared in the December 1 issue. These are stenographic reports, slightly edited, of conferences by the members of the Departments of Pharmacology and of Medicine of Cornell University Medical College and the New York Hospital, with collaboration of other departments and institutions. The questions and discussions involve participation by members of the staff of the college and hospital, students, and visitors. These conferences will appear in each issue published on the first of the month. The next report will concern "Treatment of Pneumonia."

### The Management of Nephritis

DR EUGENE F DuBOIS. We are particularly fortunate in having as guests two men from the New York University College of Medicine. In our sister institution the Departments of Medicine and Physiology have been performing some of the most fundamental work in nephritis and the physiology of the kidney. The clinical aspects will first be discussed by Dr Goldring.

DR WILLIAM GOLDRING. My part of the discussion will have to do with the treatment of diffuse glomerulonephritis, that type of renal disease which has been defined as a bilateral nonsuppurative inflammation of the kidneys. The etiology of diffuse glomerulonephritis is still in doubt. There is some information leading to the supposition that an allergic response on the part of the renal tissue is the cause of the manifestations, particularly the fact that most occur in the convalescent period following an acute infection. There is also sufficient evidence that infection, that is, the nephrotoxin of the hemolytic streptococcus, is the cause. The hemolytic streptococcus is not the only organism associated with the disease, although it is the most frequent.

Acute diffuse glomerulonephritis is not a very serious disease because about 70 per cent recover completely. Only about 5 per cent die in the acute attack, and the remaining 25 per cent either become latent or pass into the chronic stage.

One of the principal difficulties that I have in discussing the treatment results from the fact that the etiology or the mechanism of the changes is unknown. For that reason the treatment is essentially symptomatic. It might be of use to distinguish the manifestations of the disease which threaten life and require immediate and prompt attention from those that are unimportant as far as treatment is concerned. Among the more important ones are acute left ventricular failure, congestive

heart failure, encephalopathy, anuria, and uremia, and among the less important are edema and hypertension without encephalopathy. I will consider these as well as certain general questions—such as, when the patient should be allowed out of bed, what to do about suspected foci of infection, and finally, diet.

Acute diffuse glomerulonephritis is most often a disease which sets in abruptly in the convalescent stage of an infectious disease. Paroxysmal dyspnea may mark the onset. This is probably the result of the sudden rise in blood pressure with strain on the left ventricle. There is some reason to believe that the diffuse vascular injury, which is part of this disease, affects the coronary vessels as well as the renal and other systemic vessels. The treatment of acute paroxysmal dyspnea as it occurs at the onset is not very important, since most patients recover from this without treatment. The acute phase of that manifestation rarely lasts for more than one day and exceptionally may go as long as four or five days. Morphine helps to tide them over. Venesection has been suggested in acute left ventricular failure when it occurs in persons with organic heart disease, because the removal of a volume of blood makes it easier for the left ventricle to adjust itself. However, I have never seen it used in the acute left ventricular failure of acute diffuse glomerulonephritis and I do not think it plays the same important role as it does in organic heart diseases.

Congestive heart failure occurring at the onset of an acute diffuse glomerulonephritis is a rare occurrence, probably due either to sudden increase in blood pressure or to capillary or vascular damage in the myocardium itself. Congestive heart failure may be difficult to recognize because edema is so often a part of the renal disease, but enlargement

something done. The usual course of events is the use of the high protein diet, perhaps in addition to thyroxin or thyroid by mouth to hasten the effect on plasma protein regeneration, but without avail. One must usually resort to the diuretics. In my experience the mercurial diuretics are by far the most effective. The diuretic effect is temporary, the edema almost invariably returns within a short time unless the diuretics are continued until the patient either recovers, which occasionally happens, or goes into the hypertensive stage where the edema disappears spontaneously. In such cases the fibrosis of the kidney with destruction of glomeruli results in a smaller loss of protein and a greater concentration in the blood. In time this leads to the spontaneous disappearance of the edema.

The use of a mercurial diuretic always calls for discussion because mercury compounds are known to be nephrotoxic. The statement is made—and I think fairly generally—that if a patient has any degree of renal insufficiency as judged, for example, by loss of concentrating power or if there is blood in the urine, even microscopic hematuria, the mercury diuretics are contraindicated. My own feeling is that the mercurial diuretic is not harmful provided it can be excreted. It is harmful if it is retained. It is our practice to give 1 cc of mercupurin intravenously. If there is no diuretic effect at the end of twenty-four or thirty-six hours, we give 2 cc intravenously. If this causes no effect, the diuretic is discontinued. But as long as the mercurial diuretic produces diuresis, I have no fear that it will do any real damage, and I give it in the presence of renal insufficiency, in the presence of hematuria, and in the chronic stage of the disease where it is necessary to relieve the edema for the patient's comfort. However, I do not expect it to alter in any way the course of the disease.

Sometimes it becomes necessary to remove fluid mechanically. This is rare and is always beset with danger because of the possibility of infection. It is very easy to infect edematous tissue. Southey's tubes and needles, which were used years ago, frequently caused cellulitis and in some cases erysipelas. We now resort to the mechanical removal of fluid only from the pleural spaces and from the peritoneal or pericardial cavity when it is present there in such amounts as to cause distress.

I will finish by saying that in the hypertensive stage of the disease there is no rational treatment. The hypertension cannot be in-

fluenced when it has become permanent in the stage of the contracted kidney. The anemia is almost impossible to control with iron, liver, or any kind of treatment. Transfusions have been recommended, but their effects are temporary and do not alter the course of the disease. The diet in the hypertensive stage of the disease, I think, should be unlimited, the patient should be allowed to make his own choice. If there is edema, again sodium should be restricted. If there is protein loss, the patient should be encouraged to take more protein than the normal, perhaps about 100 or 125 Gm a day, but apart from those two changes it is my experience that the diet might just as well be left to the patient to insure as much comfort as possible during the remaining days of his life.

DR DUBOIS. Dr Shannon will continue with the physiologic aspects.

DR JAMES A. SHANNON. At the present time it is impossible to establish a rational basis for therapy in glomerulonephritis, since knowledge of the disease process, in terms of physiologic mechanisms, is inadequate. We can, however, define the therapeutic problem. The acute process, although important in itself, derives its major significance from the fact that it initiates, in some 25 per cent of the cases, a condition that will eventuate in renal insufficiency. Function in these cases as measured by gross renal function tests may remain within normal limits for a number of years following the acute process. There is present, nevertheless, a progressive destructive lesion. The therapeutic problem is twofold: first, the devising of means to prevent the acute process from entering the progressively destructive stage, and, second, the interruption of the progress of the latter following its inception.

It is obvious that such therapy, if rational, must rest upon a knowledge of the factors that tend to enhance or oppose the fundamental processes responsible for the progress of the disease. This knowledge is not available at the present time. I do believe, however, that there is sufficient in the way of experimental evidence to permit us to speculate a little on what these factors may be.

First we must decide whether chronic diffuse glomerulonephritis is characteristically episodic in nature or whether it may be considered to be a disease that, once initiated, may progress to its final termination in the absence of the initiating agent. I believe that many or most clinicians and pathologists will accept the probability of the latter alter-

which he frequently noted a diuresis. We have not used that because we hesitate to put so much water into the circulation at a time when very little is being excreted. The restriction of sodium is the only rational mode of attack on this type of edema.

The mechanism of the hypertension is poorly understood. At one time it was thought to be due to injury of the systemic vessels resulting in spasm. In the light of Goldblatt's work, the mechanism may be impaired renal blood flow. As the mechanism is still not established, the treatment of hypertension is still without rational basis. As I have already mentioned, the encephalopathic manifestations such as convulsive seizures and coma associated with hypertension may be controlled by reduction of intracranial pressure. In some instances the blood pressure tends to fall, at least temporarily, when magnesium sulfate is given intravenously.

There are differences of opinion as to when the patient may be allowed to be up and about. It is my belief that patients should be allowed out of bed when the hypertension and the edema have disappeared. The persistence of urinary abnormalities is no indication for keeping a patient in bed. Proteinuria and hematuria may last three to six months longer, even in those patients who ultimately recover. It does not seem reasonable to keep them confined to bed for that period of time.

As to the question of the removal of suspected foci of infection, it is the general belief, and has been my experience, that the course of the disease remains uninfluenced by the removal of suspected foci of infection. There is little question about what to do when there is peritonsillar abscess or localizations of pus which are obvious and can be reached. They should be removed promptly. Their removal should not be delayed until the disease has subsided.

The general feeling is that suspected foci, such as tonsils that look as though they might be infected or on culture show large numbers of a beta hemolytic streptococcus, are often removed too soon. In 30 or 40 per cent of such patients there is a recurrence or an exacerbation of the nephritic manifestations, and tonsillectomy is followed by recurrence not only of hematuria but even of edema and hypertension. It is now believed that where suspected foci are not obviously purulent infections they should be removed four to six months or even longer after the subsidence of the systemic signs of the disease.

There is no general agreement concerning

diet in the acute stage of diffuse glomerulonephritis. The view that protein is harmful to kidneys rests on observations made on smaller animals which, I think, now would not be considered valid. There seems to be no clean-cut evidence in man that protein injures the kidneys in any stage of renal disease. Furthermore, it is beneficial in one form of renal disease or one stage of it. The recent experimental work of Smadel and Farr, in which nephrotoxic nephritis terminated in uremia when a high protein diet was used while the same disease in animals on a low protein diet went on to recovery, makes the question of proteins in the diet a little more pertinent at the moment, but again this is an observation in animals which may or may not be applicable to man.

Our practice at Bellevue is to allow the patient in an acute diffuse glomerulonephritis to take a regular ward diet and to restrict sodium. We have never made any attempt to put the patients on any kind of a dietary regimen, and our morbidity and mortality figures correspond favorably with figures obtained on patients treated with strict regimens.

I might say there is no real objection to keeping patients on a low protein, high carbohydrate diet, but there does not seem to be any sound basis for taking it too seriously. So much then for the acute state of the disease.

About 20 to 25 per cent of these patients will pass into a chronic stage which may take one of two forms: either the nephrotic form or the hypertensive and also, of course, combinations of both. The nephrotic stage of the disease is the result of persistent loss of protein in the urine with depletion of plasma protein at a time when the hematuria and the hypertension have disappeared, resulting in a diminution of plasma protein and low osmotic pressure. The result is massive edema. The rational treatment would appear to be the replacement of the protein which is lost in the urine. That, as you know, is the basis of the high protein feeding in this stage of renal disease. From my own experience the administration of a high protein diet is not often associated with any recognizable increase in plasma protein or diminution of edema. However, the diet should be high in protein on the grounds of general nutrition.

The edema calls for treatment because the patient wants it and not because it is of any real importance so far as the course of the disease is concerned. Sometimes the edema becomes so massive that patients must have

lar bed, impaired as it may be, could, given a longer time, expand to satisfy the tissue need

If this were so, we would be able to interrupt the sequence of events which results in the eventual destruction of the renal tissue as previously outlined

I do not feel that as the result of these considerations we are now in a position to advise the restriction of protein intake as the logical therapy in this disease, particularly, since there is already loss of considerable amounts of protein in the urine and since the restriction of protein intake carries many consequences that have nothing whatsoever to do with the processes going on in the kidney. We do suggest the following that the forces acting in the normal individual and in the normal kidney have the potentiality of converting an initial process into one that is then more or less self-propagating, that regulation of dietary protein may be a means by which we can control these forces, and, finally, that with the aid of the precise functional methods available at the present time these propositions can be put to test, first experimentally and then clinically. I am aware that in certain respects this formulation conflicts with the views of Dr Goldring

Dr DuBois We are particularly anxious to bring out differences in principle between the experimental work of the laboratory and the observations in wards with patients and so, Dr Goldring, perhaps you would like to come back now

Dr Goldring Not right away

Dr DuBois The meeting is open then for a general discussion. Are there questions on either of these presentations?

Dr Ephraim Shorr I wondered whether Dr Goldring could tell us if chemotherapy is indicated in the acute Bright's disease or whether he regards the process as past the infectious stage and hence past influence by such substances as sulfapyridine and sulfanilamide. One now and then hears of what seem to be striking results, and I wondered whether your experience confirms them.

Dr Goldring I have had no experience with chemotherapy in acute nephritis, but it would be my impression that the renal lesion having been initiated would not be influenced by such therapy

Dr Harry Gold If you had a patient with an acute tonsillitis or septic sore throat who developed acute diffuse glomerulonephritis, would you use sulfanilamide with the idea, first, of influencing the primary infec-

tion, and, second, of preventing the involvement of the kidney?

Dr Goldring I would not hesitate to use it in the presence of a renal lesion. I expect it probably would help the local infection, but I doubt very much if it would influence the process in the kidney that has already begun

Dr John E Detrick When the use of sulfanilamide was first introduced, several clinics tried it and I believe they thought, if anything, it made the patient worse. I understand further clinical trials were planned at the Johns Hopkins Hospital and at Rochester, but I have not heard of the outcome of their second trial. Have you?

Dr Goldring The results have not been encouraging

Dr McKeen Cattell The damage in general is supposed to be a toxic process rather than a direct infection of the kidney parenchyma, is it not?

Dr Goldring That may be the answer

Dr Gold Is there anything to be said about the pH of the urine in nephritis? In experimental nephritis, MacNider found that sodium bicarbonate exerted a beneficial effect on the course of the kidney damage. Does that apply to humans? I wonder whether the acidosis that occurs in the late stages of nephritis might not be due to the protective excretion of large quantities of base in the course of the disease, and, if so, would sodium bicarbonate or other alkali prove beneficial?

Dr Goldring When we go back to some observations by Osman, made a good many years ago, it appears that he was convinced at that time and he still believes that the alkalizing treatment is a very useful treatment in nephritis. I do not know of anyone who has repeated his observations

Dr Detrick In Baltimore in Dr Longcope's clinic, they were using the alkaline ash diet in every patient with nephritis

Is there not experimental work in animals to show that the kidneys when putting out an alkaline urine do less work? If arterial and venous oxygen saturation of the blood is measured and if the amount of oxygen used is calculated, the work done when the kidney excretes an alkaline urine is less per cubic centimeter of urine for the same concentration than would be expended on an acid urine. Is that correct?

Dr Shannon Before answering Dr Detrick's question directly, I should like to stress two physiologic facts which are too fre-

native with respect to the disease in man. Certainly the work of many in the field of experimental pathology shows this to be true in a variety of experimental nephritides—that is, having once injured the kidney by one means or another, a sequence of events is initiated which in itself will eventuate in renal failure. If this be true in man, then it is logical that we look for some series of variables within the normal economy of the body which are the propagating factors in the disease following its inception.

It is common knowledge that surgical ablation of renal tissue is followed by compensatory hypertrophy of the remainder and that this hypertrophy is accompanied by an increase in renal blood flow to serve the regenerating tissue. Furthermore, Chanutin, Addis, and others have demonstrated in the rat that an important variable determining both the rate and extent of this compensatory hypertrophy is the protein content of the diet. That protein is important in the renal economy is evidenced by other observations. Many years ago MacKay demonstrated in a series of animals including the dog that there is a close correlation between protein intake and renal weight. Also of importance in this relation are the observations of Van Slyke and his collaborators and ourselves that in the dog both renal blood flow and glomerular filtration rate is drastically affected by the protein content of the diet. When I say drastically I mean to the extent of some 300 per cent.

I would quote the observations of Smadel and Farr in a slightly different manner than used by Dr Goldring. They demonstrated that following an initial renal insult, the result of an injection of a specific nephrotoxin, the addition of protein to the diet caused progression of the renal lesion to final insufficiency. This effect occurred in only one of three strains of rats, but it is to be expected that the inbreeding used in the development of a strain will naturally tend to enhance or suppress a susceptibility such as this. These observations are important in part because the disease, as described histologically, simulates in many ways glomerulonephritis but more so because the agent they used to cause this progression of the disease, protein, is one which we know controls to a considerable degree both the regeneration of renal tissue and renal blood flow. Although these conclusions are derived from experimental animals, it is unlikely that they will not obtain for the renal tissue of man.

If one can accept the view that acute diffuse glomerulonephritis is a disease characterized by renal tissue ablation by one means or another and at the same time by impairment of the lability of the renal vascular bed because of specific injury, one has the variables that at least theoretically could cause progression of the condition to ultimate renal insufficiency. The sequence of events from this point of view would be first, a glomerulitis with ablation of some renal tissue directly by the disease process or indirectly through anoxia, then, a compensatory hypertrophy associated with relative renal ischemia due to the initial impairment of the renal circulation, and later, the development of vascular hypertonus, local or general, or the enhancement of existing hypertonus along the lines of the Goldblatt principle, resulting in the destruction of more renal tissue and so on into renal failure. The crux of this hypothesis is that due to a vascular injury occurring with the renal tissue ablation the expansion in the renal blood supply cannot keep pace with the tendency of the renal tissue to undergo compensatory hypertrophy.

The therapeutic indication, if this be the case, is obviously the interruption of this vicious cycle or the prevention of its inception. I hesitate to mention the restriction of protein intake as a possible therapeutic measure, but logic demands its consideration.

Addis suggests that the renal hypertrophy that follows the ablation of tissue by the disease is a feature in the compensation to the disease process which is to be encouraged. He suggests a dietary regimen that gives protein to aid in the regeneration of renal tissue yet does not yield such substances as creatinine, uric acid, etc., which will increase the osmotic work of urine formation. I would not suggest that we have such a superabundance of renal tissue that we can lightly lose large quantities and suffer no physiologic handicap. I would suggest, however, that there is little need in the ordinary case of acute diffuse glomerulonephritis to worry about the immediate loss of renal tissue and that therapy should be guided by the more remote consequences of this loss. In our point of view the important indication is to permit a normal restoration of the balance between renal tissue, normal and regenerating, and the renal blood flow or rather to aid in the restoration of the balance, since it apparently is satisfactorily struck in some 75 per cent of the cases. It may be that if one were to slow up the regenerative process by a limitation of dietary protein the renal vascu-

case I gather you do relatively little therapeutically except keep the patient absolutely quiet and provide a diet with low sodium

DR GOLDRING Yes

DR DuBOIS Then treatment has not changed so much in the last thirty or forty years That is about what was done before when the Imperial drink, or alkaline drink, was used That has been given up

DR GOLDRING That has been given up as far as I know

DR DuBOIS But it may come back

DR GOLDRING It may come back

DR DuBOIS The clinicians have had all these years to try out various methods of treatment Nothing impressive in the way of preventive measures has as yet appeared, has it?

DR GOLDRING Not as far as I know

DR DuBOIS It looks as if we would have to wait for more experimental work, Dr Shannon, the type of work that you are doing

DR SHANNON Of course my point of view is generated largely from the fact that nothing has been developed that seems to have any influence on the course of this disease whether the therapy is based upon bacteriologic, immunologic, biochemical, or clinical considerations If this is the case, it seems to me to be fair evidence that we may have inherent in the functional makeup of the kidney the necessary variables which, once brought into play in the proper manner, can be self-propagating to a final termination Whether or not the variables I have mentioned are the ones is, of course, another story

DR DuBOIS I have one final question of Dr Goldring Are the clinicians doing things now that may be damaging to the kidney in acute nephritis?

DR GOLDRING I do not think so I think, as Dr Shannon does, that this condition, whatever it is, this diffuse vascular disease, starts and runs a set course, and I do not think it is within the doctor's power to do much harm or much good

DR DuBOIS Dr Goldring, will you summarize the ground covered in this conference?

DR GOLDRING The material presented at this conference leads to the conclusion that

nephritis in its chronic stages is a progressive disease, which is very little influenced by any regimen of treatment Further, it appears that little can be done to alter the percentage of cases of acute glomerulonephritis which become chronic The discussion of the underlying pathology indicates that we are still in the dark regarding the underlying mechanisms in the disease, but it appears probable that anatomic and physiologic factors inherent in the kidney provide a self-propagating system which eventually results in a degree of renal failure incompatible with life Thus, if the vascular supply failed to keep pace with the hypertrophic parenchymal changes, a vicious circle would be set up, resulting in a progressive decrease in functioning renal tissue

Experimental evidence was cited indicating that a high protein diet tends to cause hypertrophy of the kidney and thus with the observation of a lower survival rate in rats, following renal damage, when the diet is high in protein, suggests that a certain amount of control might be exerted by regulation of the protein intake We do not know to what extent these results can be transferred to man, and, because of other possible undesirable consequences of a low protein diet and the failure to influence mortality statistics, limitation of proteins in nephritis is not recommended Further, no advantage appears to be gained by limiting fluids The treatment of edema is not regarded as important unless it is causing the patient discomfort, and the only rational therapy is the restriction of sodium salts

Treatment then is almost entirely symptomatic Useful therapeutic procedures are for paroxysmal dyspnea, morphine, and phlebotomy, for congestive heart failure, intravenous ouabain supplemented with digitals by mouth for convulsive seizures, magnesium sulfate, for coma in an acute attack, slow drip spinal tap, for anuria, there is no useful procedure, for uremia, infusion of hypertonic solutions, for acidosis and dyspnea, intravenous sodium bicarbonate and normal saline, for edema, sodium restriction and the mercurial diuretics

It may be again emphasized that as yet we have no therapy that has an appreciable influence on the course of the disease

## THE GREAT LOVER

Gently, he pushed her quivering shoulders back against the chair She raised beseeching eyes in which faint hope and fear were struggling From

her parted lips the breath came in short, wrenching gasps Reassuringly, he smiled at her

Bzzzzz, went the dentist's drill — *Widor*

quently overlooked when questions such as these arise. In the first place, the physiologic work of the kidney is so complex that it is usually difficult to relate a change in the energy consumption of the organ as a whole to any specific experimental variable. Van Slyke and his collaborators have demonstrated in the unanesthetized dog almost direct proportionality between renal blood flow and oxygen consumption. Other than this I know of no well-established correlation relating to energy consumption, and even here it seems likely that the changes in these two variables may have been the result of a third factor. Second, in terms of the composition of the blood and urine, the energy expended in urine excretion is only a small fraction, about 2 to 4 per cent, of the energy turnover as calculated from renal oxygen consumption. Now when one speaks of an alkaline urine, one speaks relatively, since the limit of alkalinity is about equal to pH 8.0. An alkaline ash diet would produce a urine with a pH somewhere in the neighborhood of 7.0. It may be that the operations that result in an acid urine are costly in terms of energy expended, whereas the formation of a urine at pH 7.0 would require no work to be done on the hydrogen ion. It is difficult to see, however, how this specific operation can be important in terms of the energetics of the organ as a whole.

DR DETRICK: Our main idea was the same as bedrest—that is, getting the kidney to do as little work as possible.

I should like to hear more discussion on the question of rest of a patient as a means of diminishing the work of the kidney.

DR GOLD: Bearing on Dr. Detrick's question is the observation that kidney function tests show a fairly marked fall of renal function after violent exercise in athletes.

DR SHANNON: I feel that here again one is defeated by the complexity of the mechanism of urine formation. Theoretically one must consider that the most restful condition for the kidney is a state of moderate diuresis, and this is probably so in practice. Actually, however, measurements of oxygen consumption during periods of diuresis and concentration show little difference in the energy turnover in the two states. This point of view is stressed by the consideration that in a day about 180 L. of water and 1 Kg. of salt are filtered, of which all but about a liter of water and a few millimols of salt are reabsorbed. Other similar operations, which must similarly be described by almost astronomic figures, find no representation in the urine at all. It

is almost certain that the vast majority of renal work goes into this type of process. It follows from this that when we attempt to relate a urinary finding to the energetics of the organ as a whole it makes up too small a part of the complete cost of urine formation for us to gain a satisfactory correlation. I feel that many therapeutic aims (such as giving the kidney rest), though they seem superficially feasible, are by the very nature of the organ impossible. I do not mean to say that these therapeutic aims and measures are in themselves incorrect, but I do say that they must find their justification from clinical or experimental trial rather than theoretic considerations.

DR DETRICK: We do not like to limit fluids in a patient with an acute diffuse glomerulonephritis and even avoid doing a concentration test. One of the best diuretics is water and if we can keep the kidney well supplied we feel we have done something. In the light of our present knowledge do you think it would be best to give the alkaline ash diet with the maximum amount of fluid that can be tolerated without producing edema? As to protein, we give them a regular diet as you do.

DR SHANNON: I do not believe that there is any theoretic objection to an alkaline ash diet, and there is certainly none to the administration of adequate amounts of water. With respect to the alkaline ash diet, however, it is a question in my mind whether or not one can justify it on any other basis than the fact that it seems to do the patient some good. However, if this is true, it is justification enough.

DR DUBOIS: I think your statement, Dr. Shannon, that the kidney does least work in moderate diuresis is one that would be new to most clinicians. It seems to me that that is an important point of view that has been brought out by the newer physiology. Is the difference significant clinically?

DR SHANNON: I do not believe so. I feel that the amount of energy that goes into the formation of a concentrated urine as compared to the energy consumption of the organ as a whole is too small. On the other hand, there may well be other advantages to be gained in presenting a dilute rather than a concentrated urine to the cells of the distal portions of the tubules.

DR DUBOIS: It seemed to me that Dr. Goldring in his suggestion of treatment concentrated on the complications that came up when certain aspects of acute nephritis became very prominent but that in the ordinary

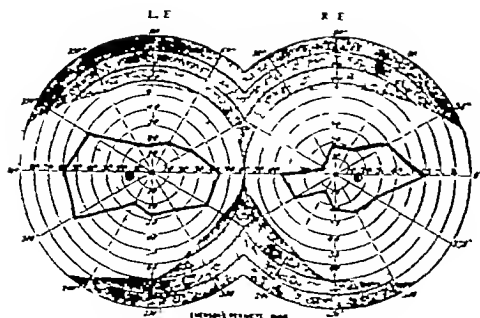


FIG 1

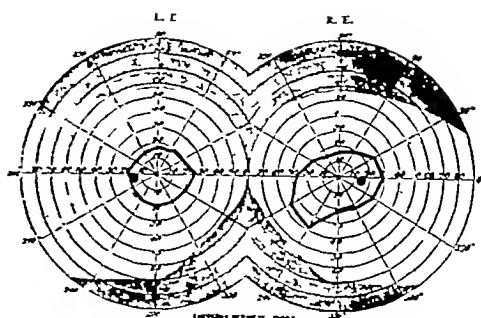


FIG 2

doors could recognize objects only at about the same distance. Within two weeks the vision gradually improved, the scotomas disappeared, and the patient regained his previous visual acuity inside of a month. The peripheral fields remained practically unchanged. The following methods of treatment were directed against the trypanamide amblyopia: intravenous injections of sodium thiosulfate, 50 per cent sucrose solution by vein, potassium iodide by mouth, and spinal puncture. He was seen at home four days after the eighty-second dose of trypanamide. An eye examination (by D F G) was made on May 8, 1938. The optic disks remained a faint yellow-white, had sharp outlines and were but little excavated, in fact they had remained unchanged from the previous examination. The subjective symptoms revealed a visual acuity reduced to H/M at 18 inches and a large central scotoma for form and colors (taken on an improvised screen). The diagnosis was retrobulbar neuritis.

An eye examination (by D F G) on July 14, 1938, showed whole of disk yellow-white with sharp outline, fine changes in each macula, right more than left. The optic atrophy appeared about the same. Vision was 20/30 in right eye and 20/40+ in left eye. They were corrected to 20/20 in right eye and 20/30 in left eye. There was a good recovery from attack of retrobulbar neuritis. The fields are shown in Fig 3.

Primary syphilitic optic atrophy is a progressive lesion often ending in blindness. It is one of the few manifestations of syphilis that is

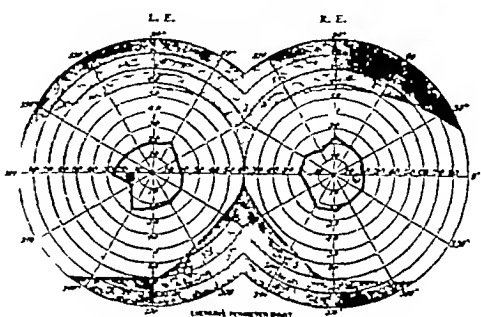


FIG 3

infrequently checked by antisyphilitic therapy. Much difference of opinion exists as to the proper place of arsenicals in treatment. Some feel that they further endanger vision, while others believe that they offer some hope of arresting the lesion.

Trypanamide is a white, odorless, crystalline substance, readily soluble in water and containing 25 per cent of arsenic. It is related to atoxyl and arsacetin. The drug is rapidly eliminated, 88 to 95 per cent in twenty-five hours (Stokes<sup>1</sup>), and it is remarkably noncumulative. It is a pentavalent arsenical in contrast to trivalent arsphenamine and neoarsphenamine. Stokes<sup>1</sup> quotes Young and Loevenhart to the

## WASSERMANN REACTIONS

Blood		Spinal Fluid	
11/5/32		11/10/32	
Noncholesterolized	3+	Noncholesterolized	4+
Cholesterolized	3+	Cholesterolized	4+
10/29/34		10/29/34	
Noncholesterolized	+	Noncholesterolized	4+
Cholesterolized	2+	Cholesterolized	4+
3/4/36		Colloidal Gold—4° 433°	
Noncholesterolized	0	221° 100—type I.	
Cholesterolized	2+	5/7/38	
8/7/36		Noncholesterolized	4+
Noncholesterolized	1+	Cholesterolized	4+
Cholesterolized	2+	Globulin	0
2/28/37		Cell count	31
Noncholesterolized	+	5/10/38	
Cholesterolized	+	Noncholesterolized	3+
10/18/37		Cholesterolized	4+
Noncholesterolized	+	Flocculation	Suspicious
Cholesterolized	2+	Globulin	No increase
4/5/38		Some xanthochromia—light	
Noncholesterolized	+	yellow clear	
Cholesterolized	+	Cell count	7

# Case Report

## DRUG ALLERGY WITH SPECIAL REFERENCE TO TRYPARSAMIDE

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**VISUAL** disturbances accompanying the administration of tryparsamide have been reported by many observers in various parts of the world, but the case about to be described presents certain unusual features

### Case Report

Mr A. G. D., aged 47, a widower, was first seen November 5, 1932. He had retired because of ill health from the restaurant business one and one-half years before this date. In March, 1932, he had a "stroke" that paralyzed the right side of the face, right arm, and right leg, although consciousness was retained. He partially recovered and was able to walk by dragging the right foot. On November 4, 1932, he developed weakness of the right half of the body and became unable to get out of bed. There was retention of urine and incontinence of feces. The patient had always been well but admitted a primary chancre at the age of 18. The family history was unimportant.

Physical examination showed a rather small man of fair development and nutrition. His mind functioned slowly, and he responded to questions deliberately but accurately. The left pupil was greatly dilated, neither pupil reacted to light and only slightly to accommodation. His blood pressure was 130/90. The lungs and heart were negative. The urinary bladder reached half way to the umbilicus. The right arm and leg presented spastic paralysis, and the left arm and leg revealed marked muscular weakness. Both knee jerks were exaggerated, especially the right. Right ankle clonus and left Gordon were obtained. Bilateral Babinski reflexes were present. He was unable to turn in bed or help himself. The blood Wassermann was 3 plus, both antigens, spinal Wassermann 4 plus, both antigens, very faintly hazy, globulin faintly positive. The cell count was 32. The urine was clear specific gravity, 1.015, albumin, 0, sugar, 0, rare leucocyte.

He was placed upon alternating courses of iodobismutol and sulfarsphenamine intramuscularly. After several months of treatment remarkable improvement was evident. He regained good use of the left arm and leg, with considerable motion in the spastic right arm and leg so that he could walk to the toilet with assistance. Control of the bladder and rectal sphincters had become normal, and the mental retardation had entirely cleared. By March, 1934, after sixteen months of nearly continuous treatment, he was able to go downstairs and walk on the street with the aid of a cane. The right foot turned inward and the right hand was partially flexed.

An eye examination (by D. F. G.) on March 11, 1933, revealed external eyes normal, vision—

right eye, 20/15 and left eye, 20/15, muscles normal. The right pupil reacted slightly to intense light, the left pupil, three times as large, had no reaction to light, both reacted to accommodation (attempted) and convergence—early Argyll Robertson pupils. Media were clear. Fundi had slight yellow tinge, and disks, nasal half was yellow-white, with an old perivascularitis (pigment along sheaths of some vessels). He had paresis of accommodation. Confrontation fields were beginning to contract, color perception was normal. The diagnosis was early optic atrophy (Fig. 1). On March 27, 1933, he was given glasses for reading +2.75 *oculus uterque*.

A course of ten weekly intravenous injections of tryparsamide was started April 29, 1934, beginning with a dose of 1 Gm. and soon increasing to 2 Gm.

An eye examination (by D. F. G.) on June 25, 1934, showed vision—right eye, 20/15 and left eye, 20/15, pupils unchanged, fields charted, primary optic atrophy. On September 11, 1934, vision in the right eye was 20/30 and in the left was 20/25, the fields were charted. On January 2, 1935, vision in the right eye was 20/30 and in the left was 20/25, the fields were charted. There were no other changes.

Meanwhile he had received alternate courses of iodobismutol (2 Gm.) and tryparsamide (2 Gm.) with rest periods between. By October 20, 1936, two and one-half years later, he had been given a total of eighty tryparsamide injections, seventy of which were 3-Gm. doses. After tryparsamide was stopped he took courses of sulfarsphenamine, iodobismutol, or bismuth subsalicylate twice a year with longer rest intervals between.

An eye examination (by D. F. G.) on April 19, 1938, revealed vision—right eye, 20/30 and left eye, 20/25. The fields are shown in Fig. 2.

Soon after this eye examination, two years after the last dose of tryparsamide, the decision was made to administer further treatment with this drug in an effort to halt the optic atrophy which had slowly progressed. Inasmuch as ophthalmic reactions from tryparsamide almost invariably occur within the first ten injections and because the patient had already tolerated eighty doses with perfect ease, no apprehension was felt.

On April 24, 1938, he was given an intravenous injection of 15 Gm. of tryparsamide. No untoward effects were noted, and ten days later, on May 4, 3 Gm. was given. The next day he noted dimness of vision as if he were looking through a frosted window pane. Impairment rapidly increased. Things looked cloudy as if in a snow bank, and he had difficulty in seeing trees across the street. He was able to distinguish fingers at 3 feet with some effort. A few days later the patient became unable to recognize faces at 10 feet and when looking out-

comes greatly reduced, but, if unrefined and un-concentrated serum is given in large amounts, serum sickness may be induced in over 90 per cent of individuals. In the field of contact sensitivity the experiments of Bloch quoted by Landsteiner<sup>1</sup> are of interest. Under natural conditions only a few persons become sensitive to Primula, but by treatment with concentrated extracts almost anybody can be sensitized—an acquired allergic state.

In the case of drug allergies, some persons show evidence of sensitivity after one or two doses, whereas others may require numerous contacts before sensitization occurs. Reactions to tryparsamide usually occur within the first ten injections. Moore<sup>5</sup> goes so far as to state that "if more than twelve injections are tolerated without reaction, its subsequent appearance need not be feared." Nevertheless, in our reported case, eighty injections were well tolerated, an interval of two years elapsed, two injections were given, and a severe visual reaction occurred.

Fitz-Hugh<sup>6</sup> considers agranulocytic anemia to be due to an acquired sensitivity of the leukocytes to certain drugs and other allergens. He makes use of the theory of "conditioned deficiency," described by Castle in pernicious anemia where there is a specific gastric defect, the lack of this specific substance prevents the individual from utilizing even a superior diet to form normal blood elements. Fitz-Hugh applies this idea to drug allergy and alters it by supposing influences that divert and modify normal action into an effect of conditioned toxicity which changes the usual effect of the drug into an allergic response. Among states that may condition hematologic sensitization are mentioned disorders of the liver and spleen, vitamin deficiency, genetic factors (atopy), endocrine influences, intestinal putrefaction, states of fatigue and shock, and prior hemopoietic disease. Rhoads and Miller<sup>7,8</sup> showed that dogs conditioned by a deficient diet (called the black-tongue diet) became anemic when they were given aminopyrine or crystalline indole. Neither the deficient diet alone, aminopyrine, nor indole would produce the same result.

Leinfelder<sup>10</sup> reports the case of a man, aged 52, who was given a single intravenous injection of 1 Gm of tryparsamide. Three days later he became blind. He died of uremia nine days after tryparsamide was administered. Autopsy showed acute degeneration of the ganglion cells of the retina and of cells in the inner nuclear layer. No evidence of acute degeneration was found in the optic nerves and tract. The central nervous system and the remainder of the organs showed no related changes. A striking fact in reports of pathologic changes in tryparsamide reactions is the absence of tissue changes outside the eye and optic pathways. Leinfelder felt that his case suggested idiosyncrasy to the drug. It is our thought that it can be regarded as drug

allergy, either due to sensitization from the previous administration of arsenic or possibly to hereditary allergy.

The frequency of visual reactions to tryparsamide is by no means great enough to warrant the assumption that the drug in itself is toxic for humans. Sloan and Woods<sup>11</sup> reported that of 241 patients treated with the drug 10.2 per cent showed subjective visual reactions and 5.5 per cent showed objective evidence of damage. They quote Lilie to the effect that of 2,087 patients treated with tryparsamide, 5.33 per cent had subjective eye reactions and 3.53 per cent had objective eye reactions. In 1929, Phelps,<sup>12</sup> of the United States Navy, reported 4,488 doses of tryparsamide given in the Navy with no visual reactions.

If the drug is withdrawn at the first evidence of trouble, recovery is the rule, but, if its use is persisted in, more serious results may follow. In rare instances the occurrence of dermatitis has been reported.

Allergic reactions to drugs and chemicals appear to fall into two groups: (1) general reactions—which are frequently seen and include fever, polymorphous skin rashes, joint pains, edema, and leukopenia, and (2) local reactions—less often encountered in a localized tissue or special shock organ. An example of a typical action of an allergen on a shock organ is seen in pollinosis where the respiratory tract is almost exclusively involved—the upper part in hay fever and the lower portion in asthma. In the case of drug allergy due to aminopyrine, the hemopoietic system seems to be the shock organ and agranulocytosis results. With cinchophen sensitivity, the liver usually bears the brunt of the burden. Tryparsamide reactions affect the visual tract almost exclusively. As new chemical compounds are discovered and used, additional allergic responses are sure to occur.

### Summary

A case of syphilitic meningoencephalitis is reported. Within two years the patient received a total of eighty injections of tryparsamide (approximately 220 Gm.) with no unfavorable symptoms whatever. After an interval of two years, tryparsamide treatment was again resumed. Following the second injection a tryparsamide amblyopia occurred, followed by eventual recovery.

The symptoms of drug allergy are usually general in nature and somewhat similar for most drugs. They consist principally of fever, polymorphous skin eruptions, arthritis and muscular pains, etc.

A smaller group of drugs appears to produce allergic symptoms chiefly in a localized tissue or a single organ. Tryparsamide appears to fall in this class.

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effect that the biochemical reason for the production of optic nerve lesions by tryparsamide is the general rule that the presence of the amino groups in the para position to the arsenic, regardless of its valence, induces tropism for the optic nerve. In man, optic nerve injury is markedly more frequent in the presence of previous injury to the optic tract by syphilis—the third neurone of the optic tract is involved.

Allergy to drugs has been described by Tuft<sup>2</sup> as a condition of hypersensitiveness in which an amount of a medicinal agent, nontoxic for an average individual, is followed by an unusual but characteristic reaction. It is distinguished from the toxic action of the drug because the latter produces symptoms that are in exaggeration of the normal physiologic action. Large doses of salicylates produce ringing in the ears of most individuals. In our intern days the treatment of rheumatic fever included the administration of large doses of salicylates until "the birds began to sing." On the other hand, a single 5-grain tablet of acetyl salicylic acid may cause death in an allergic individual. The symptoms produced by the toxic or physiologic action of a drug differ widely according to its chemical constitution. The symptoms of drug allergy, however, regardless of the drug given, are more or less the same with certain exceptions. They consist chiefly of fever, multiform skin eruptions, edema, arthritic or muscular pains, adenitis, and leukopenia. The duration is usually short and the course self-limited. It is interesting to note that the symptoms of serum sickness induced by the therapeutic injection of animal serums are similar to the manifestations of drug allergy.\*

Tuft<sup>2</sup> further states that, as a rule, sensitivity exists to only one element or chemical group in a given drug. Sensitivity to quinine usually involves only the levorotary groups, whereas the dextrorotary relatives, such as quinidine, may be well tolerated. In patients who have become sensitized to pentavalent tryparsamide, the trivalent arsenicals (arsphenamine or nearsphenamine) may possibly be well borne.

The chemical substances that produce drug allergy are of low molecular weight and probably under ordinary circumstances possess no antigenic activity. This is in contradistinction to antigenic proteins of large molecular size which induce the formation of antibodies and cause anaphylaxis. Landsteiner<sup>3</sup> believes that a drug or chemical molecule may attach itself to a protein molecule within the body, thereby forming a new protein that may stimulate the formation of specific antibodies. On subsequent contact an allergic drug reaction may result. Landsteiner is of the opinion that the existence of some kind of antibodies fixed in or on the cells is not disproved by our failure to find them with present methods.

The reaction to tryparsamide described in this communication does not fall in the group of exaggerated physiologic, i. e., toxic, reactions nor does it belong among the known symptoms of drug allergy in general. The episode was not accompanied by severe headache, rise in blood pressure, erythematous blush, or convulsions as has been reported in similar reactions. There was no typical optic neuritis, but there was a transitory retrobulbar neuritis that left the patient with his former visual acuity, fields, good color sense, light adaptation, and improved accommodation. The matter of tropism for, or specificity of, action on a tissue or organ of the body comes into consideration.

The paper of Sugg<sup>4</sup> presents some pertinent observations. In susceptible persons cinchophen seems to have a selective affinity for the liver, producing a toxic cirrhosis which may be associated with acute yellow atrophy and a fatal ending. Many doses of cinchophen over a long period of time may appear to be well tolerated when unexpectedly toxic symptoms appear. The drug may be well taken for an indefinite time, be discontinued, and then be followed by alarming symptoms when again administered, even after a lapse of months or years. This resembles our experience with our patient, A. G. D. Sugg reminds us of the observation that a drug may be well tolerated for a long time when for an unknown reason the individual becomes sensitized to it and toxic symptoms occur—the refractory or delayed period of sensitization which may last days, weeks, or years. Some of his reported patients took cinchophen in a wide range of doses without symptoms, and later when a smaller dose was taken, they became toxic. Sugg suggests three possibilities: (1) The liver damage may follow an abnormal susceptibility because of certain local predisposing conditions, (2) silent liver damage may have been caused by earlier doses, and accentuation of the damage occurs upon readministration after months or years, (3) the toxic manifestations may be allergic in nature.

Drug allergy may be of two types—hereditary or acquired. In the hereditary or pathologic form, a person who has never before taken a particular drug has an immediate allergic reaction, often of severe degree, on its first administration. It is assumed that sensitivity to a chemical radical in the drug has been transmitted through the germ plasma or possibly has been acquired in utero through the mother's blood. The patient knows of no previous contact with the drug in question. In the more common acquired or physiologic type of drug allergy, symptoms usually occur after several or many doses of the drug. There is always a period of incubation which may be days, months, or years in duration. Serum sickness, which closely resembles drug allergy in its symptoms, is also an acquired allergy. If concentrated refined serum is given in small amounts, the number of serum reactions be-

\*See Editorial, "Tattoo" in the JOURNAL for December 15 on page 1761.—Editor

# Medical News

## County News

### Albany County

Governor Lehman spoke on "Your Health as a National Asset During Mobilization" on December 12 at Albany Law School in the first of a series of community meetings sponsored by Albany Medical College, Albany Hospital, Albany County Medical Society, and the Hospital Council of Albany.

The meetings, which will take up all phases of community health during defense mobilization, will have recognized experts as leaders. Each will stress a phase of health maintenance.

Subsequent addresses will outline the place of the family doctor in community health maintenance, how to achieve best possible nutrition, prevention of epidemics, control of dangerous insect pests, and how to protect a community from effects of anxiety, uncertainty, and fatigue.

The annual meeting and election of officers of the county society were held on December 11. The annual dinner was given on December 18 in the DeWitt Clinton Hotel Crystal Room. The speaker was Lillian T. Mowrer, wife of Edgar Ansel Mowrer and author of *Journalist's Wife*.

### Bronx County

A six-point plan for economic help to physicians absent on military duty was adopted by the county society at a recent executive session.

The plan includes the safeguarding of appointments and seniority rights of staff members absent on military duty at the following Bronx hospitals: Montefiore, St. Francis, St. Joseph's, Fordham, Bronx, Morrisania, Lehanon, and Lincoln, and the formulation of a model contract between the doctor in active service and his substitute, including a half-and-half distribution of all funds collected between both doctors, under the supervision of a special committee of the society.

The plan also provides that the society remit, in whole or in part, the dues of any member called into active service.

The officers of the county society for 1941 are as follows: president, Dr. Joseph Golomb; president-elect, Dr. Ahner Stern; vice-president, Dr. Morris Cohen; secretary, Dr. Henry Friedland; treasurer, Dr. J. Adlai Keller; counsel, Dr. Maxwell Boockbaum; and executive officer, Dr. Edward C. Podvin. On the board of censors are Drs. Goodlatte B. Gilmore, Samuel Weiskopf, Frank L. Gattuta, Samuel Epstein, Vincent S. Hayward, and Abraham J. Fleischer, with Mrs. Joseph Rosenheck as counsel. Elected to the board of trustees are Drs. Milton J. Goodfriend, chairman, Joshua Leiner, secretary, Harry Aranow, Philip Eichler, and Clarence H. Smith.

### Broome County

The annual dinner meeting and election of officers of the county society were held at the Binghamton Club on December 10. The scientific program was as follows: *speakers*—Dr. Victor W. Bergstrom and Dr. Ulysses S. Kann and *subject*—Boeck's Sarcoid—Report of a Case

Involving Skins and Bones," shown with lantern slides.

### Chemung County

Negotiations between the county society and Elmira city and relief officials on care of relief patients will be continued, the society decided on November 27 at the Arnot-Ogden Hospital.

The society also re-elected president, Dr. George R. Murphy, vice-president, Dr. John H. Burke, Sr., secretary, Dr. F. S. Hassett, and treasurer, Dr. Sven L. Larson.

The officers constitute the committee negotiating with city and county officials on the relief patient problem.

One important question is whether physicians should be paid by the city and county for care of relief patients in the hospitals. Under the present system they do not charge for such service.

The physicians also believe that the mechanics of treating indigents outside the hospitals, and receiving payment, should be simplified. Another question is whether duties of the city physician should be curtailed or continued on the present basis. Some physicians believe that relief patients seeking free treatment at the City Hall clinic should be permitted to select their own doctors instead of going automatically to the city clinic.

Society officers will have another conference with city and county officials and report at a later society meeting.

Vitamin deficiency diseases were discussed by Dr. Thomas T. Mackie of the Post-Graduate Medical School of New York City at a joint dinner of the Chemung County Medical and Dental Societies at the Mark Twain Hotel in Elmira on December 6.

### Delaware County

Homer Folks Hospital was host to the county society for its annual meeting, in the form of a dinner in the hospital auditorium on December 11. Dr. Rene J. Dubos, of Rockefeller Institute for Medical Research, spoke on "The Vulnerable Structures of the Bacterial Cell."

### Erie County

The county society held its annual meeting and election of officers at the Hotel Statler on December 16.

Dr. Critchlow, director of the Western New York Medical Plan, states that it has now over 1,000 members and that the outlook is very favorable. Some 750 doctors are enrolled.

Dr. Richard Cattell, of Boston, addressed the Buffalo Academy of Medicine on December 4 on "Common Duct Surgery."

### Genesee County

Dr. Charles M. Graney, of Batavia, was elected president of the county society to succeed Dr. E. G. Rulhy, of Byron, when 25 members gathered for the annual meeting at the Batavia Club on December 5. Dr. Raymond L. Warn, of

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## Physicians for the Navy

Physicians are needed in the Regular Navy and the Naval Reserve

**REGULAR NAVY** Applicants must be under thirty-two years of age and must have completed one year's internship They are commissioned as lieutenant (junior grade) and paid \$2,699 per year if having no dependents, or \$3,158 per year if having dependents

A limited number of **FOURTH YEAR MEDICAL STUDENTS** are admitted on acting appointments, with the same pay, given one year's internship in the Navy after graduation and then commissioned

The next examination for both these classes will be held on January 6, 1941 Applications must be submitted early in December

**VOLUNTEER NAVAL RESERVE** Members are not subject to the Selective Service Draft but obligate themselves to serve in time of war or national emergency If they request it, they may be given active duty at other times

There are two classes of the Volunteer Reserve

(A) *Volunteer General Service Class* Applicants must be under thirty-five years of age They are commissioned as lieutenant (junior grade) (equal to 1st Lieutenant in the Army) or, if of sufficient age and experience, as lieutenant (equal to Captain in the Army) Many will be given aviation training at government expense if they request it **INTERNS** and **RESIDENTS** are eligible to enroll in this class of the Reserve

The Surgeon General places all interns and residents on the deferred list, and they will not be called to active duty before finishing their internship or residency except in extreme urgency

(B) *Volunteer Special Service Class* This class is composed of doctors who have had special training and are under fifty years of age A limited number of general practitioners are also commissioned in this class The rank is lieutenant (junior grade), lieutenant, or lieutenant commander, dependent upon age, professional standing, and academic seniority If mobilized, they would be assigned to special service within the United States or its possessions or on hospital ships

For further information apply by letter, telephone, or call in person at the District Medical Office, Headquarters Third Naval District, Federal Office Building, 90 Church Street, New York City

pital, (c) Clinical methods by Dr Franklin M Hanger, associate physician, Presbyterian Hospital.

Dr John Augustus Hartwell, noted surgeon, formerly director of The New York Academy of Medicine and its president for two terms, died suddenly on November 30 of a heart attack on the grounds of the South Side Sportsmen's Club. He was 73.

Dr Henry E Sigerist, of Johns Hopkins, will speak on "Paracelsus in the Light of Four Hundred Years" on January 23 at The New York Academy of Medicine in the course of "Lectures to the Laity on the Art and Romance of Medicine."

#### Onondaga County

The following officers were elected at the annual meeting of the county society on December 3: president, Dr Leo E Gibson, vice-president, Dr Ambrose T Lawless, secretary, Dr Dwight V Needham, treasurer, Dr A Carl Hofmann, censors—Drs Ellery G Allen and Arthur N Curtiss, delegate—Dr William W Street, alternate—Dr Frederick S Wetherell.

At a dinner meeting that followed there was group singing and entertainment, including pictures of the Syracuse-Colgate game.

In his annual secretary's report, Dr Needham brought out that 465 physicians now reside or practice in Onondaga County and that the society's membership has increased from 394 to 404 in the last year.

Seven doctors he listed as engaged in active military service are Drs L J Chronis, F O Harbach, J R Kallet, W J Liccione, C D Reid, F L Ritter, and J D Thomson.

#### Oswego County

Dr Harwood Hollis, of Lacona, has been appointed superintendent of the Oswego County Tuberculosis Sanatorium at Orwell and will succeed his father, Dr Leroy F Hollis, 67, who recently resigned after serving for twenty-two years.

#### Queens County

The Physicians Art Club of the county society held an exhibition at the society building at Forest Hills from November 26 to December 10.

The Friday Afternoon Talks in December were as follows: December 6—"Common Disorders in Genito-Urinary Practice," by Dr Frank Coleman Hamm, urologist, St Mary's and Buswick, associate urologist, Brooklyn Hospital, December 20—"Disorders of the Feet," by Dr Herbert C Fett, orthopedic surgeon, Long Island College Hospital.

#### Rockland County

Dr Matthew J Sullivan, of Haverstraw, for many years village and township health officer was elected president of the county society on December 4, succeeding Dr Russell L Blaisdell, superintendent of the Rockland State Hospital.

Dr E Armand Scala, of Suffern, was named vice-president, filling the vacancy created by the upward step of Dr Sullivan. Dr Dean Miltimore, of Nyack, was renamed treasurer, and Dr William J Ryan, superintendent of Sumner Park Hospital, was re-elected secretary.

Dr Walter S McClellan, director of the New York State Spa Commission at Saratoga, was the principal speaker. He gave a brief illustrated talk on the value of spa therapy. Brief addresses were also made by the retiring and incoming presidents.

#### Saratoga County

The county society is sponsoring a postgraduate course of lectures on common diseases at the Saratoga Hospital, from November 27 to January 29.

#### Schenectady County

The county society held its annual meeting and election of officers at the Mohawk Golf Club on December 12.

Dr Henry A Kurth, of Schenectady, who died on December 7 at the age of 77, had practiced 50 years. One of the oldest practitioners in Schenectady, Dr Kurth was one of the three area physicians honored when the county society feted its "50-year men" at the semi-annual meeting in June. Illness, however, prevented Dr Kurth from attending the dinner.

#### Steuben County

Dr Richard O'Brien, of Corning, presided at the annual meeting of the county society on November 28 at Bath. The meeting followed a luncheon attended by more than 40 members.

Included in the scientific program was a paper by Dr John Alsever, of Syracuse, on "Organization of a Plasma and Blood Transfusion Service at the Medical Center of Syracuse University." A paper was also given by Dr C M Brust, of Syracuse, on "Diagnosis of Rectal Diseases."

At the election following the luncheon Dr W J MacFarland, of Corning, was named president, Dr Joseph B Mathewson, of Bath, vice-president, Dr Rudolph Shafer, of Corning, secretary-treasurer, Dr L M Kysor, of Hornell, and Dr Herbert B Smith, of Corning, delegates to the annual meeting of the State Society.

#### Tioga County

The annual meeting of the county society was held at the Green Lantern Inn in Owego on December 3, and these officers were elected: president, Dr C T V Redding, vice-president, Dr J B Schamel, secretary-treasurer, Dr I N Peterson, delegate, Dr W A Moulton, alternate, Dr A C Hartnagle, and censors, Drs F H Spencer, F A Carpenter, and W B Gregory.

Mr Robert Bassett of the Selective Service Draft Board spoke briefly on problems of that body. Dr Betowski, examining physician for the board, spoke on his problems and asked for cooperation.

Dr Raymond Douglas, of Biggs Memorial Hospital Staff, addressed the society on "Tuberculosis and the General Practitioner," and his talk was discussed by the members.—*Reported by Ivan N Peterson, M D, Secretary*

#### Ulster County

Dr William J Cranston, for many years a practitioner in Kingston and who has just retired after an active practice of 46 years, was given a notable tribute on November 19 when a testimonial dinner was given for him at the Governor

Oakfield, was chosen vice-president, and Dr Peter J DiNatale, of Batavia, will continue as secretary and treasurer. Dr DiNatale was appointed delegate to the meeting of the State Society.

A Rochesterian, Dr F W Geib, was the guest speaker.

### Herkimer County

The county society held its annual meeting, banquet, and election of officers at the Mohawk Valley Country Club on December 10. Dr G J Frank delivered the presidential address.

The county society has asked the board of supervisors for power to recommend the appointment of the county consultant in the care of relief cases needing medical attention.

The present county consultant is Dr E E Kelley, Middleville. He and his predecessors have been recommended in past years by the county welfare committee of the supervisors. Appointments are made by the supervisors. The consultant receives a yearly salary of \$1,400.

The county society now asks that it be entitled to recommend the doctor for the county office, instead of the welfare committee. The society would submit to the supervisors the names of three doctors from which the supervisors would appoint one.

The office of the county medical consultant carries with it broad discretionary powers. A physician attending a patient on relief cannot undertake any care or prescribe medical attention or an operation without first conferring with the county consultant regarding the relief case.

The county society declared: "The appointment of the consultant by the county has heretofore been made without recommendations by the county medical society, and, therefore, precludes any check that the profession should have upon the decision of the consultant, and lays our county wide open as to a suit for damages," as a result of the decision by one physician without the endorsement of a legitimate and recognized agency of the medical profession.

"We believe that we can give to and receive from the county of Herkimer much more co-operation resulting in much better mutual satisfaction, if the county medical society be given the sponsoring power of such appointment, and thereby be as much responsible for the diligence, efficiency and fairness of the appointee as our county," the resolution of the doctors stated.

The communication was read to the supervisors, and referred to the committee on public welfare for consideration.

### Jefferson County

The county society met on December 12 at the Black River Valley Club and listened to a paper on "The Clinical Uses of Oxygen," by Dr Howard N Cooper.

### Kings County

Dr William Levine was unanimously elected president of the East New York Medical Society, on December 2. Installation will take place January 7.

Other officers elected were: Dr Morris Ant and Dr George Dorff, vice-presidents, Dr Mortimer Kopp, corresponding secretary, Dr

Harry E Beller, recording secretary, and Dr Max Dannenberg, treasurer.

### Monroe County

Industry's defense problems and the failure of health insurance plans in other cities are given as principal reasons why the county society is delaying action on a nonprofit medical expense indemnity insurance plan.

Dr Albert D Kaiser, society president, said, as quoted in the Rochester *Times-Union*, that the physicians here had not abandoned the idea of health insurance and still hope to develop a satisfactory plan, but he did not expect any action before 1941. Plans are still being studied.

Experience with health insurance programs in other communities has not been too satisfactory, Dr Kaiser said. Several have been abandoned. Industry, burdened with problems arising from defense needs, also is loath to undertake anything in the nature of an experiment at this time, Dr Kaiser added.

The county society began studying health insurance two years ago. In May, 1940, a laymen's advisory committee, headed by Marion B Folsom, submitted a tentative plan which has since been under consideration.

The public safety committee of the county society plans an intensive educational campaign in first-aid methods and procedure in Rochester's drive against the mounting toll of traffic crashes and injuries. The county society is also participating in the educational program to prepare for air raids and gas attacks.

### Montgomery County

A series of lectures on general medicine has been provided for county society members by the State Society, starting December 3 and concluding on January 14. The topic on January 7 will be "Rheumatic Fever," presented by Dr Homer F Swift, and on January 14 the topic will be "Nephritis," by Dr John D Lytle.

### Nassau County

A postgraduate course in pediatrics is being given at Long Beach Hospital, made possible through the cooperation of the county society. Similar courses are given at Nassau Hospital in Mineola, Meadowbrook Hospital, and the South Nassau Communities Hospital. Physicians from Nassau County meet once a month to hear prominent pediatricians discuss the most recent advances in medical problems.

### New York County

Dr Malcolm Goodridge, professor of clinical medicine at Cornell University, was re-elected president of The New York Academy of Medicine for a two-year term on December 5.

Dr Henry Cave, assistant professor of surgery at Columbia University, was elected vice-president.

Dr George Baehr and Dr Arthur F Chace were named as trustees for five years.

This scientific program was presented "Newer Knowledge of Liver Disease" (a) Surgical aspects by Dr I S Ravdin, the George Lieb Harrison Professor of Surgery, University of Pennsylvania School of Medicine, (b) Evaluation of laboratory methods by Dr Alexander B Gutman, assistant physician, Presbyterian Hos-

# Hospital News

## Confidential Character of Hospital Records Confirmed

THE Court of Appeals, in a 5-to-2 decision handed down in Albany on November 26, reversed an Appellate Division ruling and held that the Commissioner of Hospitals was not required to produce confidential medical records before the City Council committee investigating charges of maladministration at Lincoln Hospital, Concordia Avenue and 141st Street, the Bronx.

When the investigation began last spring the committee, headed by Councilman Louis Cohen, Bronx Democrat, demanded certain hospital records that were deemed confidential by Dr S S Goldwater, former hospital commissioner, and by Dr Rudolph Rapp, superintendent of Lincoln Hospital. Dr Goldwater and Dr Rapp refused to produce the records. The committee asserted its right to see them, and when the case was litigated Justice Julius Miller, of the Supreme Court, ruled on May 3 that the committee was right. His decision was upheld by the Appellate Division on June 30. An appeal was then taken to the Court of Appeals.

The majority opinion of the court was written by Chief Judge Irving Lehman and concurred in by Associate Judges John T Loughran, Harlan W Rippey, Charles B Sear, and Edmund H Lewis. The dissenting opinion, written by Associate Judge Edward R Finch, was concurred in by Judge Albert Conway.

## Inquiry to Continue

Councilman Cohen said that the decision would not halt the investigation. Many important records, he said, are still available to the committee.

Judge Lehman held that the statutory prohibition against the disclosure of medical information applied in the case of the Council investigation.

"The policy of the legislative prohibition against the disclosure of information obtained under the seal of professional confidence," Judge Lehman wrote, "as provided in Sections 351 to 354 of Article 33 (civil practice act) would not be carried out if the court read into those sections a limitation which would render them inapplicable in any proceedings brought pursuant to the provisions of the same article to compel such disclosure."

"The statute does not provide such a limitation in express terms, and there is no ground for reading such a limitation into the statute by implication. That would not be a 'broad and liberal construction of the statute' but a distortion of its language and purpose."

## Finch Dissents

In his dissenting opinion Judge Finch held that "it does not seem to me that we are compelled by statutory mandate to deny to a legislative committee whose avowed purpose is to uncover abuses, the right to ascertain the facts."

Judge Finch said he was "unwilling to assent to the proposition that the State Legislature or

its delegated authority, the City Council, are so circumscribed that the alleged maladministration may continue unchecked by virtue of a 'liberal construction' of Section 352 of the Civil Practice act."

On Oct 1 Dr Willard Cole Rappleye, Dean of the College of Physicians and Surgeons of Columbia University, was appointed Commissioner of Hospitals, succeeding Dr Goldwater, who resigned to give full time to his duties as president of the Associated Hospital Service of New York. Mr Cohen said the replacement of Dr Goldwater by Dr Rappleye would not affect the investigation.

## Duty of the Hospital in Care of the Indigent

THE medical staff of a hospital that receives payment from public funds for the care of the indigent sick has two important responsibilities, according to a statement recently prepared by the medical board of the Albany Hospital, Albany, New York, as reported in *The Modern Hospital*.

"First, and more important," says the report, "the staff must supply medical and surgical skill of a high caliber to the public and to the medically indigent groups, and, second, it must supply such services as economically as is consistent with adequate care of the sick."

In nearly all cases, the medical staff must decide whether a patient needs to be admitted to inpatient accommodations or can be treated in the outpatient department. This has an important effect upon costs. The use of drugs and x-ray and laboratory services also affects the cost. The policy adopted at Albany seems to be a good one.

The administration also has important responsibilities. Either the admitting or the social service department must attempt to discover possible sources of income and to determine whether these may properly be drawn upon to pay for needed medical service.

When welfare departments are called upon to pay for the hospital and clinic service of indigent patients, complaints are likely to arise on each side. The hospitals may complain that welfare departments are slow in making payments, do not always accept cases that seem to be clearly their responsibility, or require too much red tape. Also, they frequently set rates that are excessively low.

Welfare directors, on the other hand, state that hospitals often consider any case as a public responsibility if there is the slightest difficulty in obtaining payment in advance, thus converting the welfare departments into "collection agencies" for the hospitals. Some hospitals abuse the privilege of admitting emergency patients without prior authorization and label an excessive proportion of their patients as "emergencies." Difficulties also arise sometimes between hospitals and welfare agencies over special charges.

Usually, the best solution to these problems is

Clinton Hotel by members of the staff of the Benedictine Hospital

#### Wayne County

Dr James L Davis, Newark, was elected president of the county society at the annual meeting at the Hotel Wayne in Lyons on December 3

Other officers elected are as follows Dr George Pasco, first vice-president, Dr Frank Wood, second vice-president, Dr Thomas C Hobbie, secretary and treasurer, Dr Allen, Dr Besemer, and Dr M Carmer, censors, Dr Ralph Sheldon, delegate, and Dr S Houston, alternate

Dr Lloyd Griffith Lewis, associate professor of

urology in The Johns Hopkins Medical School, Baltimore, presented a paper on "Danger Signals in Urology" Dr William Eikner, of Clifton Springs Sanitarium, and Dr Albert Crance, of Geneva, also were present and discussed the paper The society plans to run a postgraduate lecture series during the coming year

#### Westchester County

The White Plains Medical Society held a regular meeting at the Gedney Country Club on November 12 Mr H D Margolies, author of the book, "Guide to Workmen's Compensation," spoke on the "Medical and Legal Aspects of Workmen's Compensation Practice" About 40 members attended

### Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
Arthur R Addy	70	P & S N Y	December 12	Brooklyn
Joseph A Capozzi	44	P & S N Y	December 6	Bronx
Clark E Congdon	72	L I C Hosp	November 26	Fort Plain
William F Conners	90	N Y Univ	November 14	Fulton
Robert Cordner	67	P & S N Y	November 26	Middletown
Frederick J Cox	74	Albany	December 5	Albany
Herbert Engel	46	Berlin	December 5	Massena
Nathan D Garnsey	76	Albany	December 4	Kinderhook
Corden T Graham	59	Michigan	November 27	Rochester
John A Hartwell	71	Yale	November 30	Manhattan
Henry A Kurth	77	P & S N Y	December 7	Schenectady
Wilmoth Osborne	44	Oregon	September 14	Manhattan
George O Pobe	65	L I C Hosp	December 4	Port Jervis
Margaret K Preston	49	Syracuse	November 24	Willard
Paul F Schilder	54	Vienna	December 8	Manhattan
Israel Trachtenberg	59	P & S Baltimore	November 21	Bronx
Walter J Wellington	65	L I C Hosp	November 29	Rye
Thomas C Williams	82	N Y Hom	December 5	Manhattan

#### IT'S A SOLDIERS' BATTLE

The success of our present and future plans of medical practice will depend in the final analysis on the interest and activity of the officers, the committees, and the members in each county society—*From the annual report of LeRoy A Wilkes, M D, executive officer, Medical Society of New Jersey*

#### MAN-MADE SUNSTROKE FOR TB BUGS

Artificial sunlight can swiftly clear the air of tuberculosis germs floating about in it Ultra violet rays, within three seconds, killed 96 per cent of the tuberculosis germs suspended in the air in experiments reported by Drs William F Wells and Max B Lurie, University of Pennsylvania

#### HURT FASTER, HEAL FASTER

British and French medical journals report that wounds suffered by Allied troops are cleaner and infections fewer than in the World War It is believed that this is due to the greater velocity of the German missiles which "go clear through the body, carrying fewer particles of tissue with them"

#### THE BIG-BORE SPEAKER

Professor (who has spoken for two hours) "I shall not keep you much longer I am afraid I have spoken at rather great length There is no clock in the room, and I must apologize for not having a watch with me"

Student "There's a calendar behind you, doctor"—*Medical World*

## Improvements

Herkimer Memorial Hospital plans to build a new wing to add 20 to 25 beds to the present 30

The Bassett Hospital at Cooperstown has installed new x-ray equipment

About \$25,000 was raised at the annual dinner of the Israel Zion Hospital of Brooklyn to resume construction of an additional building started in 1936 and postponed for lack of funds

Plans for a new New York City cancer hospital on a site at 163rd Street and Fort Washington Avenue were advanced on December 5 when the Board of Estimate referred an agreement between the city, Columbia University, and Presbyterian Hospital to the City Planning Commission for a report

Under the agreement the trustees of the university and the hospital would convey the two-and-a-half acre site, valued at \$750,000, to the city without charge. Dr Willard C Rappleye, hospitals commissioner, told the board that a ten-story institution with 315 beds could

be built there at a cost of \$2,650,000, adding the \$600,000 already had been authorized for plans and specifications

He estimated that the building could be completed in 1942. Completion of the new building would permit the city to tear down the Cancer Institute on Welfare Island and the Cancer Clinic at 124 East Fifty-ninth Street

The Methodist Episcopal Hospital, on Sixth Street, Seventh to Eighth Avenues, Brooklyn, is to build an eight-story addition alongside its present structure at a prospective cost of \$950,000

Cornerstones of the two principal buildings of the new Hillside Hospital, 264th Street and Union Turnpike, near Little Neck, Queens, New York, were laid on November 17 before 1,000 spectators by Lucius N Lattauer, Governor-elect and New York philanthropist, and Henry Kaufmann, of Pittsburgh, the two principal donors to the fund for construction of the hospital

The cornerstone of the new \$200,000 addition to Faxon Hospital, Utica, was laid on December 15

At Albany, New York, November 6, there was organized the Northeastern Society of Anesthesiology, consisting of physicians interested in this subject from Northeastern New York and the Western New England States. The officers

selected were Dr F A D Alexander, Albany chairman, Dr W J Martin, Albany, secretary, treasurer, Dr W M Moriarty, Saratoga Springs, chairman of program committee. The Society will meet once monthly in Albany

## POINT OF ATTACK FOR THE POINT OF A TACK

A story is recalled of the hillbilly sitting underneath the tree and howling with pain. A sympathetic passerby watched for a few minutes and then said, "What is the matter?"

The hillbilly replied, "I'm sitting on a tack."

Almost every doctor of medicine is howling with rage because the quacks use the term "doctor." There are none of the barnacles on the ship of Healing Arts who dare to use the degree M D.

Why not move off the tack?

Use "M D" on your door and stationery!—  
*J Michigan M Soc*

## DELINQUENT PATIENT IS PROSECUTED

Recently, an uncooperative patient with earl syphilis was brought before Judge William N Edwards, of Rye, on the charge of failure to obey the lawful order of a health officer. Although directed to attend clinic weekly for treatment, the patient had not appeared at clinic for more than a month. The defendant was found guilty, charged and sentenced to one year imprisonment and \$2,000 fine (the maximum under the law), after which sentence was suspended provided the patient attended clinics as ordered. In case of failure to attend the sentence will be imposed.—  
*Westchester's Health*

## PROTECT THE FAMILIES

The individual physician must protect the families in his care and through them the community by urging physical examination of domestic employees. Repeated emphasis on the necessity of this should result in the earlier diagnosis of tuberculosis and in the prevention of exposure to infants and children from this source of infection. An annual health certificate declaring freedom from syphilis, gonorrhea, and tuberculosis should be the requisite for the position of nursemaid.—*David V Shar, M.D. Journal-Lancet, June 1940*

## A WARNING

WAR makes pleasant news for the tuberculous. As the deaths from T N T increase those from tuberculosis lag not far behind. In the World War all countries showed this phenomenon whether under arms or not. What effect on our efforts to eradicate tuberculosis will these grim months ahead bring forth? Unless we find a way to redouble the offensive against our hidden enemy, the sad story of twenty years ago will be told again and we will find ourselves facing a record of lost ground.—*Kendall Emerson M D*

to arrange for periodic conferences between a committee of the state hospital association and representatives of the state and local welfare organizations. Professional advisory committees, composed of leading physicians, dentists, nurses, and hospital administrators, may well be appointed by the welfare department at both the state and local levels. Such committees can help to solve difficulties without undue friction.

Fair play should be the slogan on both sides. Most of these problems can soon be solved if they are approached in this spirit.

### A Joyriding Skeleton

THE skeleton in most hospital closets is grinning but well behaved, not at all like Old Bones at Dixon Public Hospital, Dixon, Illinois. It recently took a joyride about the town, as told in *The Modern Hospital*.

For teaching purposes the hospital invested in a new skeleton and lightheartedly decided to discard the old friend that had served faithfully for many years. The janitor was forthwith instructed to take it apart and burn it in the furnace.

Shortly thereafter, the chief of police called to inquire if by chance the hospital was missing a skeleton. "No" was the reply.

"Well, we picked up a drunk who was touring the town with a skeleton on the seat beside him. We thought it might belong to you. Said he picked it up at the city dump."

A grim suspicion entered the superintendent's mind. She summoned the janitor and asked if he had burned the old skeleton. Reluctantly, he admitted that the labor involved in unwiring the joints had seemed an unfair demand upon his time and that he had surreptitiously placed the gentleman's bony framework into the garbage intact.

By way of penance the janitor was sent to police headquarters to retrieve the wandering skeleton, which he sheepishly did. He then burned it under the superintendent's supervision.

### Newsy Notes

At least two counties with residents as patients in the Homer Folks Tuberculosis Hospital at Oneonta do not intend to pay the bills being levied against them for the care of these patients, according to reports in the local newspapers. Following a conference with Chenango County officials, who said Chenango County does not intend to pay any bills of the Oneonta institution, Madison supervisors voted unanimously on December 2 to follow the same procedure.

Both counties will cooperate in defending litigation which the state is expected to bring in an effort to collect the hospitals' bills. Madison County's bill is approximately \$81,000 and Chenango County's about \$45,000. Delaware County has been billed for \$50,000, and a committee has been appointed to consider the claim.

The suburban villages of Lakewood, Falconer, and Celeron, which have received free public

health laboratory service from the municipal laboratory at Jamestown for many years, soon will be required to pay the full cost of such service as a result of action taken by the board of municipal laboratory managers at Jamestown General Hospital on November 19.

The action came as a direct result of the refusal by the Chautauqua County Board of Supervisors to take action on a proposal recommended by the county medical society for providing laboratory service for all villages and towns, which, until now, have used the facilities of Jamestown and Dunkirk laboratories without charge.

The service which the Jamestown Laboratory has been providing for its neighboring villages includes routine examinations of water and milk supplies, regarded as a prime safeguard of the public health.

A new private hospital, the Sunnyside Sanitarium, to take 30 to 35 patients, has been opened on Staten Island. The medical staff consists chiefly of local physicians.

The Gowanda State Hospital Employees Federal Credit Union has lent over \$105,000 to its members since its organization five years ago, says its official report. The group has saved \$51,540, paid dividends of \$2,468 to themselves, and saved interest rates and finance charges estimated at \$10,050.

Mobile lending libraries were presented to the Olean General Hospital and to St. Francis Hospital by the Junior Group of the Daughters of the American Revolution and the Rotary Women's Club on November 30.

Rotary furnished books and magazines and the Junior D. A. R. provided the carts. Members of the latter organization operate the libraries at each hospital two afternoons a week.

The Board of Managers of the Oneida County Hospital have voted not to admit reporters to their meetings, except by invitation.

Ellis Hospital at Schenectady has arranged to have electric current supplied from two independent sources. The switchboard has automatic changeover equipment that will operate immediately upon the interruption of either source of supply, transferring the entire hospital load to the remaining service.

Doctors on the staff at Sterling Public Hospital, Sterling, Illinois, have voted to fine themselves for late or incomplete records. The superintendent reports the procrastinators to a staff officer and the names are read at the monthly staff meeting.

# Woman's Auxiliary

## To the Medical Society of the State of New York

*1 message from our program chairman—*

The program of the Woman's Auxiliary to the State Medical Society offers its members a fine opportunity for service to our sponsoring Society. Founded as our organization is upon the principle that an informed group of women could (1) interpret the aims of the medical profession to other organizations interested in health education, (2) that they could assist in entertaining at the sessions of the American Medical Association, (3) that they could promote friendliness among families of the medical profession, and (4) that they could carry on work approved by the Advisory Council—the Woman's Auxiliary has already earned its right to existence as an organization. The program has three aspects—educational, social, and economic.

Under the first heading, educational, comes the planning in each county society of a series of meetings at which topics of general interest in the health field may be discussed by qualified speakers so that our members may be equipped with the information so often sought from physicians' wives, or, if not fully informed, may at least refer the applicant to the proper source for the information. The choice of topics for the monthly meeting is very broad but should always be dictated by the specific needs and interests of the community. Approval of any major project should, of course, be secured from the county medical society. Speakers may usually be secured from the county society, and each county auxiliary should keep on file the list of speakers and their addresses. Following the formal presentation a general discussion will prove beneficial but this should always be arranged with the speaker before the program begins. The educational purposes may also be carried on by study groups formed of members who are prepared to lead informal discussions on selected topics. This method may also be applied to the study of the economic aspect of our program. Topics such as health insurance and socialized medicine will awaken the interest of many otherwise inactive members, and make them aware of the threat to the economic security of the medical profession and the danger to the public of the resultant impairment in public health services.

The social aspect of the organization has required very little aid in producing the desired

friendliness among physicians' families and in assisting at the entertainment at medical meetings. To supplement the usual formal program by an hour of sociability over a cup of tea—although originally not thought important or even desirable—has been found quite constructive in producing an atmosphere of cordial goodwill and friendly understanding. The fruits of these contacts will be evident when the county medical society includes the ladies in the invitation to their annual dinner, or when the next District Branch Meeting brings doctors and their wives together. A great deal of variation is possible in the planning of the social program and each county can best decide its own particular activities. No program service could be complete without including some specific form of social work such as an active interest in, and regular contributions to, the Physicians' Home, or help rendered to the local physicians' families in need of temporary assistance. In the present world crisis Red Cross activities should find a definite place in our planned program. In cooperation with the Public Health and Public Relations Committee a survey may be made of the organizations in which the members participate, a mailing list may be obtained from each of these and when health meetings of interest to the public are planned, notices may be sent to all persons on the various lists and their attendance urged. Cooperation with such groups as the Tuberculosis and Public Health Association, the Society for the Control of Cancer and the American Red Cross will be found of mutual benefit.

This outline of what our program may include should not be considered mandatory in any respect. Flexibility is a most desirable attribute in any plan of work. Cooperation with the Public Health and Public Relations Committee and the Legislation Committee of the State Medical Society will often indicate variation from the plan laid out at the beginning of the year. We must ever be on the alert to embrace any opportunity to assist our State Medical Society through whom we obtain membership in the Auxiliary, by promoting their aims and interests with all the force at our command.

(MRS. ALBERT M.) ISABEL C. BELL  
*State Program Chairman*

## County News

**Albany** Since the last report the auxiliary has been very busy. A bridge tea and hake sale attended by ninety-five physicians' wives attended the activities for the year. Dr. Robert Cunningham, professor and dean of Albany Medical College, addressed the group on medical education. He told of the important changes that have taken place in medicine and the need for doctors' wives to know about them. A reception in honor of Dr. and Mrs. Cunningham followed. Wives of the faculty members were invited as special guests. In the

receiving line were Mrs. Louis Hocker, membership chairman, Mrs. William Fitzgerald, president-elect, and Mrs. A. L. Madden, president. For the November meeting Mrs. J. S. Lyons, program chairman, arranged for Dr. Louis Bauer, Hempstead, Long Island, to speak on the medical preparedness policy. Dr. Bauer is speaker of the House of Delegates and a member of the Preparedness Council of the State Society. Albany was fortunate in having a man so well qualified to present a topic of such vital importance. On December 10 a rare treat was

# THE THIRD ANNUAL CONGRESS ON INDUSTRIAL HEALTH

January 13 and 14, Palmer House, Chicago

Topics and speakers are as follows

OPENING SESSION, MONDAY, 9 45 A.M.

*Report of the Council on Industrial Health*

STANLEY J SEEGER, M D, Chairman, Milwaukee

*The Physician in Industry and National Defense*

IRVIN ABELL, M D, Chairman, Health and Medical Committee in the Council of National Defense, Louisville, Ky

*Current Needs in Industrial Hygiene Research*

PHILIP DRINKER, Professor of Industrial Hygiene, Harvard University, Boston

*The Special Nature of Industrial Practice*

C O SAPPINGTON, M D, Chicago

*Disability Evaluation in Silicosis*

J L BLAISDELL, M D, Porcupine Clinic for Silicosis Research, St Mary's Hospital, Timmins, Ontario

Red Lacquer Room

MONDAY, 2 P M

## HAND INJURIES

*Anatomic Diagnosis of Injuries of the Hand*

JAMES M WINFIELD, M D, Associate Professor of Surgery, Wayne University College of Medicine, Detroit

*Treatment of Superficial Hand Injuries and Burns*

HARVEY S ALLEN, M D, Chicago

*Division of the Nerves and Tendons of the Hand*

MICHAEL MASON, M D, Chicago

*Importance of Purposeful Splinting Following Injuries of the Hand*

HENRY C MARBLE, M D, Boston

*Prevention and Treatment of Hand Infections*

SUMNER L KOCH, M D, Chicago

Red Lacquer Room

MONDAY, 2 30 P M

## AVAILABILITY OF TRAINED INDUSTRIAL HEALTH PERSONNEL

*The Trained Industrial Nurse*

RUTH HOULTON, R N, Secretary, Industrial Nursing Section, National Organization for Public Health Nursing, New York

*The Industrial Hygiene Engineer*

(Speaker to be announced)

*The Safety Engineer*

W H CAMERON, Managing Director, National Safety Council, Inc, Chicago

*The Medical Industrial Hygienist*

PAUL A NEAL, M D, Chief of the Division of Industrial Hygiene, National Institute of Health, U S Public Health Service, Bethesda, Md

*The Physician in Industry*

ROBERT T LEIGHT, M D, University of California, Berkeley, Cal

Room 8

MONDAY, 6 30 P M

An informal dinner and round table discussion intended primarily for state and county medical society committees on industrial health will be held. The subject matter for discussion will include problems of organization and plans for future activity

TUESDAY, 9 30 A M

*Employment of the Physically Handicapped*

D L LYNCH, M D, President, American Association of Industrial Physicians and Surgeons, Boston

*Ageing as a Problem of Industrial Health*

EDWARD J STIEGLITZ, M D, Research Associate in Gerontology, National Institute of Health, U S Public Health Service, Bethesda, Md

## ACUTE RESPIRATORY DISEASE IN INDUSTRY

*Incidence and Costs of Acute Respiratory Disease in Industry*

ANTHONY J LANZA, M D, Assistant Medical Director, Metropolitan Life Insurance Company, New York

*Respiratory Disease and Air Conditioning*

CAREY P MCCORD, M D, Chairman, Committee on Air Conditioning of the American Medical Association, Detroit

*The Role of the Physician in Industry in the Control of Acute Respiratory Disease*

GEORGE M PIERSON, M D, Philadelphia

Red Lacquer Room

TUESDAY, 2 P M

## INDUSTRIAL OPHTHALMOLOGY

*Economic Importance of Visual Disability in Industry*

LEONARD GREENBURG, M D, Chairman, Industrial Advisory Committee of the National Society for the Prevention of Blindness, New York

*Essentials of First Aid and Later Management of Industrial Eye Injuries*

SYDNEY WALKER, JR, M D, Chicago

*Detection and Control of Defective Vision in Industry*

ARTHUR M CULLER, M D, Dayton, Ohio

*Protective Equipment for Eyes in Industry*

THOMAS D ALLEN, M D, Associate Clinical Professor of Ophthalmology at Rush Medical College, Chicago

HENRY F CARMAN, M D, San Francisco

Red Lacquer Room

WEDNESDAY, JANUARY 15

On the day following the congress, the Chicago Medical Society will conduct clinics illustrating practical problems in industrial medicine, industrial hygiene, and traumatic surgery

On the same day the Chicago Medical Society will hold a dinner and evening meeting on the relationship of the private practitioner to the industrial health movement. The program will be

*Industrial Health—A Medical Opportunity*

STANLEY J SEEGER, M D, Chairman, Council on Industrial Health, American Medical Association, Milwaukee

*Medical Service for the Small Plant*

ANTHONY J LANZA, M D, New York

*The Control of Syphilis in Industry*

HAROLD A VONACHEN, M D, Peoria, Ill

INSTITUTE ON RADIOLOGY  
Syracuse University College of Medicine  
Syracuse, New York

Saturday, January 18, 1941

Presented under the auspices of Central New York Roentgen Ray Society; Medical Society of the State of New York, Syracuse University College of Medicine, Division of Cancer Control of the New York State Department of Health.

PROGRAM

January 18, 1941

Syracuse University College of Medicine, Syracuse

Meeting called to order at 1 30 p m by

Albert Lenz, M.D., President

Central New York Roentgen Ray Society

*Opening Remarks*

James M. Flynn, M.D., President

Medical Society of the State of New York

*Chairman of the Meeting*

Herman G. Weiskotten, M.D., Dean

Syracuse University College of Medicine

- 1 45 p.m. "Physics of Radiation for the Radiologist"  
Edith H. Quimby, Sc.D., Associate Physicist  
Memorial Hospital, New York City
- 2 30 p.m. "Roentgenological Aspects of Brain Tumors: Diagnosis and Treatment"  
Merrill C. Sosman, M.D., Roentgenologist  
Peter Bent Brigham Hospital, Boston, Mass.
- 3 15 p.m. "Indications and Results of Roentgen Therapy"  
Ursus V. Portmann, M.D., Radiation Therapist  
Cleveland Clinic, Cleveland, Ohio
- 4 00 p.m. "Radiosensitivity of Tumors"  
Fred W. Stewart, M.D., Pathologist  
Memorial Hospital, New York City
- 4 45 p.m. "The Cyclotron"  
Stafford L. Warren, M.D., Chief Radiologist  
Strong Memorial Hospital, Rochester, New York
- Discussion conducted by Louis C. Kress, M.D., Director, Division of Cancer Control,  
New York State Department of Health

DINNER MEETING (Informal)

7 00 p.m. Small Ballroom, Hotel Syracuse, Syracuse, New York

*Toastmaster—James M. Flynn, M.D.*

*Introduction of Speaker by*

Edward S. Godfrey, Jr., M.D., Commissioner

New York State Department of Health

*Speaker*

R. R. Spencer, M.D., Assistant Chief, National Cancer Institute, United States Public Health Service

*Local Committee on Arrangements*

Carlton F. Potter, M.D., Chairman

Donald S. Childs, M.D., Lucas S. Henry, M.D., Foster C. Rulison, M.D.

While the Institute is planned especially for radiologists, all physicians in the state are cordially invited to attend. The price of the dinner is \$2.00. No other fees will be charged. The sponsoring agencies are very anxious to know how many plan to attend the afternoon session and how many will be at the dinner. Reservations should be addressed to

O. W. H. Mitchell, M.D., Chairman

Council Committee on Public Health and Education

Medical Society of the State of New York

428 Greenwood Place, Syracuse, New York

afforded the members of Albany, Columbia, Saratoga, Rensselaer, and Schenectady counties with an opportunity to hear Dr Peter Irving of New York City, secretary and general manager of the New York State Medical Society and the editor of the NEW YORK STATE JOURNAL OF MEDICINE. He stressed three subjects of the utmost importance at the moment to the State Society and the sixty-one component county medical societies: (1) The Revision of the School Health Program for the State of New York, (2) Medical Care of the Indigent, the Near Indigent, and also the Lower Income Group just above, and (3) Medical Preparedness. Considerable work is being done by the State Society in all these phases. Dr Irving advised physicians' wives to be on the alert to inform the lay people on "what we think can and should be done to achieve the best results in these fields." The audience was greatly impressed by the delightful manner in which Dr Irving presented his topic which is of keen interest to auxiliary members.

Queens Mrs Michael Schultz of Hollis, Long Island, was named president, and Mrs William Godfrey of Flushing, president-elect at a meeting of the woman's auxiliary in the Medical Building, Forest Hills. Mrs Schultz succeeds Mrs R H Murphy. Other officers elected and installed with Mrs Schultz at a reception held by the Auxiliary in the Medical Building on December 14, include Mrs J M Dobbins, first vice-president, Mrs P B Shuey, recording secretary, Mrs Howard Meall, treasurer, Mrs Harold Foster, assistant treasurer, Mrs T M d'Angelo, historian. District representatives Mesdames Edward Steiner, Giuseppe D'Andrea, J Gibson Hall, W J Lynch, Hillard Bresky, Charles Levin, Geo Jantzen, Frank Mazzola. Mrs Harry P Mencken was chairman of the

nominating committee. Following the installation there was a musical program given by the doctors' orchestra. Mrs. Paul B Schuey is chairman of the Installation Committee. Mrs. Murphy at the meeting on November 26 announced that she would hold a tea at the Medical Building for the outgoing and incoming officers on December 3.

Washington It is always a pleasure to represent a new county for "our page." Real progress was made by the Washington County Auxiliary this fall. The first regular meeting convened at the home of Mrs Edward V Farrell, Whitehall. The officers selected for the year were president, Mrs Irvin V Decker, Sailem, vice-president, Mrs E V Farrell, Whitehall, secretary, Mrs Wallace F MacNaughton, Ft Edward, treasurer, Mrs Roy L Borrowman, Ft Edward. Plans were made at the first executive board meeting at the home of Mrs MacNaughton to broaden the scope and activity of the auxiliary, to have diversified programs, sponsoring outstanding speakers and to hold a luncheon or dinner meeting annually. Due to the long distance between towns in Washington County, as is the difficulty in so many upstate organizations, four meetings will be held yearly. On December 10, Mrs W MacNaughton was hostess to sixteen members and three new members for a social and business meeting. Mrs I Decker appointed Mrs Thomas C Healy to compile material from medical magazines, especially *Hygeia* and the *Auxiliary Bulletin*, in this way creating the interest of doctors' wives in medical literature. At the social hour Mrs D M Vickers sang and was accompanied by Mrs G H Hiney of Cambridge—thus concluding an afternoon which made everybody feel happy to be one of this large organization.

## DON'T FORGET OUR NATIONAL BULLETIN

*It is not too late to subscribe!*

## AWARDS FOR OBSERVATIONS ON EPILEPSY

Two annual awards of \$100 each are offered by the Laymen's League against Epilepsy for the best original unpublished observations or investigations bearing on the subject of epilepsy. One of these is for work done in a state epileptic colony or mental hospital, the other is for work done elsewhere. Since one object of the award is the encouragement of junior workers, the committee will take into consideration the facilities of the authors, clinical as well as laboratory studies will be welcomed. Awards will be made by a committee of three, composed of the president of the American League against Epilepsy, the chair-

man of the Section on Convulsive Disorders of the American Psychiatric Association, and a third physician chosen by the officers of the Laymen's League against Epilepsy. It is hoped that winning contributions will be presented before the annual joint scientific session of the first two of these organizations. At the discretion of the committee awards may be divided or postponed.

Additional information can be obtained from the secretary of the Laymen's League against Epilepsy, Mrs N Bond Fleming, 25 Shattuck Street, Boston.

Rastas Sambo does yo' all know why dere am such an affinity 'tween a colored man an' a chicken?"

Sambo "Must be 'cause one am descended from Ham an' de odder from eggs"—*Pathfinder*

A man reviving from an anesthetic was being very sentimental. The wife nearby said to the nurse "I have not heard him talk like that since our honeymoon, where do you buy the dope?"—*The Doctor and Old Quarterly*

nomics of the American Medical Association Octavo of 185 pages Chicago, American Medical Association, 1939 Paper

It would stretch the imagination of a social planner to devise any scheme for the organized payment for medical services that is not described in this publication. Several hundred plans for medical care of the indigent involving governmental support and medical society management are explained.

The House of Delegates of the American Medical Association has endorsed cash indemnity prepayment plans but has not sought to prohibit any of its component societies from cooperating with or organizing other types of prepayment for medical service provided their character is not such as to render it impossible to give good medical service.

The number and variety of the plans for medical services—operating and proposed, postpayment and prepayment, service and cash, sponsored by a medical society and other organization—give proof of the efforts that are being made to supplement the private practice of medicine, and indicate a desire to discover, by social experimentation a solution of local medical problems.

**Handbook of Bacteriology** For Students and Practitioners of Medicine By Joseph W. Bigger, M.D. Fifth edition Octavo of 466 pages illustrated Baltimore, Williams & Wilkins Co., 1939 Cloth, \$4.25

The new edition of this excellent handbook contains short but quite complete descriptions of the pathogenic microorganisms. The sections on immunology are also adequate for the purpose for which they are intended. By elimination of most of the controversial material and burdensome data the author has succeeded in compiling a volume which very well meets the needs of the general practitioner.

ALVIN HOLLANDER

**A Synopsis of Surgical Anatomy** By Alexander L. McGregor, F.R.C.S. Fourth edition. Duodecimo of 664 pages, illustrated Baltimore, Williams & Wilkins Co., 1939 Cloth, \$6.00

This small book contains a wealth of useful information for surgical diagnosis and treatment. In a concise manner and with an abundance of excellent diagrams it covers the field of normal and abnormal anatomy as the practitioner must know it.

For quick reference it is an excellent book to have at hand.

EDWARD P. DUNN

**Fundamentals of Biochemistry in Relation to Human Physiology** By T. R. Parsons M.A. Sixth edition. Duodecimo of 461 pages, illustrated. Baltimore, William Wood & Co. 1939 Cloth, \$3.00

The fact that this book has reached its sixth edition, coupled with the fact that the fifth edition had to be reprinted twice, is sufficient evidence of its popularity and usefulness. The reason for this is immediately perceived on reading it. A treatise on chemistry is expected to be dry as dust and studying it a tiresome mental exercise. Instead this book reads almost like a novel and affords mental relaxation. Particularly interesting are the little quotations at the

head of each chapter. The author quotes not only from scientific writers but lines from Shakespeare, Nietzsche, Gray, and St. Paul are found which apply to the subject under discussion. This serves to connect a supposedly pure science with philosophy and religion—indeed with life and living.

A new chapter on sterols is particularly timely and it will probably be greatly expanded in future editions.

All in all it is a welcome revisit of an old friend  
BENJAMIN DAVIDSON

**Argyria** The Pharmacology of Silver By William R. Hill, M.D., and Donald M. Pillsbury, M.D. Octavo of 172 pages Baltimore, Williams & Wilkins Co., 1939 Cloth, \$2.50

The authors have covered the subject in a thorough and comprehensive manner. The bibliography is exhaustive—601 references are listed. They point out the necessity for more enlightenment of physicians and pharmacists regarding this complication of silver therapy. The public, too, should be warned on the labels of containers of silver compounds dispensed on prescription or taken as self-medication.

CHARLES SOLOMON

**Psychiatry for Nurses.** By Louis J. Karnosh, M.D., and Edith B. Gage, R.N. Octavo of 327 pages illustrated St. Louis, C. V. Mosby Co. 1940 Cloth, \$2.75

This is an elementary textbook for nurses which tends to present in a simple and concise though adequate manner, the salient points of psychiatry so that the pupil nurse may get an adequate appraisal of the facts in the nursing of mentally sick patients. It is written with the view of enabling the nurse to familiarize herself quickly with the symptoms and treatment of the more common psychoses. It tends to follow the psychobiologic school of psychiatry more than any other school. A special chapter discusses shock therapy in mental diseases, and special chapters are devoted to medicolegal aspects of psychiatry and to mental hygiene.

It is a good book that recommends itself to the average pupil nurse.

IRVING J. SANDS

**The New International Clinics** Original Contributions, Clinics, and Evaluated Reviews of Current Advances in the Medical Arts. Edited by George M. Piersol, M.D. Volume I, New Series Three. Octavo of 319 pages, illustrated Philadelphia, J. B. Lippincott Co., 1940 Cloth \$3.00

The latest issue of *The New International Clinics* contains as usual many valuable clinical articles. The Review of Recent Progress is that by Cantarow in the field of the vitamins. There is a symposium from the University of Pennsylvania in which the most provocative paper is that by Fitts-Hugh on "Precordial Migraine." In this issue, too, is the first half of an excellent comprehensive review of jaundice by Held and Goldbloom.

MILTON PLOTZ

**Trial of Field and Gray** Edited by Winifred Duke. Octavo of 302 pages illustrated London, William Hodge & Co. 86 Hatton Garden, 1939 Cloth, 10/6

# Books

Books for review should be sent to the Book Review Department at 1313 Bedford Avenue, Brooklyn N Y. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and the interest to our readers.

**The Poison Trail.** By William F Boos, M D Octavo of 380 pages New York, Hale, Cushman & Flint through the American Can Company, 1939 Cloth, \$3 00

This volume of reminiscences of a Massachusetts' toxicologist contains much popularized information about poisons. It may prove of interest to amateur toxicologists and aid readers of stories of crime detection. Despite a supplement containing a description of various analyses, there is little to interest the scientist. The style is sensational, sometimes interesting, and always devoid of distinction.

MILTON PLOTZ

**It Is Your Life Keep Healthy, Stay Young, Live Long.** By Max M Rosenberg, M D Octavo of 450 pages, illustrated New York, The Scholastic Book Press, 1940 Cloth, \$2 50

This is a book on health written for the laity by a physician. Thus it has a better background of medical information than the many volumes on this subject written by physical directors, nurses, and what have you.

The subjects covered in this book are legion but for the most part are topics on which the people should be informed. Generally speaking, the subject matter is presented in simple language, at least, where the author evidently feels that he is too technical, an attempt is made to explain the points more clearly.

Emergency and simple measures to be used for ordinary ailments are described but beyond this point the services of a physician are urged.

A E SHIPLEY

**The Foot and Ankle Their Injuries, Diseases, Deformities and Disabilities.** By Philip Lewin, M D Octavo of 620 pages, illustrated Philadelphia, Lea & Febiger, 1940 Cloth, \$9 00

A book of some six hundred pages devoted entirely to the human foot and covers diseases, injuries, deformities, and disabilities. In a word it is a comprehensive study of the foot and fills a long-felt need in medical literature.

It is well written, the illustrations are ample, and the bibliography is large. There is nothing quite like it in the literature, and it will become a standard reference book on the subject.

Dr Philip Lewin is to be congratulated on presenting to the medical profession so valuable a contribution.

JA C RUSHMORE

**Fractures and Other Bone and Joint Injuries.** By R. Watson-Jones, F R C S Octavo of 723 pages, illustrated Baltimore, Williams & Wilkins Co, 1940 Cloth, \$13 50

The author has had a large experience in the treatment of fractures and allied injuries. As a result of this wide experience, he has developed a personal technic and methods of banding these injuries. Most of them are simple and can be easily followed by the average surgeon. Although the book is essentially devoted to the

methods devised by the author, there are numerous instances where he advocates the technic devised by others which he has found to be efficient. It is one of the best books published on the subject. It is well illustrated by excellent drawings and photographs and is recommended for all who do traumatic surgery, whether of a minor or major character.

J B L'EPISCORO

**Clinical Practice in Infectious Diseases.** For Students, Practitioners and Medical Officers. By E H R. Harries M D, and M Mitman, M D Octavo of 468 pages, illustrated Baltimore, Williams & Wilkins Co, 1940 Cloth, \$6 00

So many advances have been made in the field of the acute infectious diseases within recent years that there is a place for a textbook, like this, which appears comprehensive and modern in all respects and which certainly is of timely interest.

It is novel to have described, in one volume practically the entire group of the acute infectious diseases or fevers which are apt to be encountered even in time of war. This is a departure from the usual method but is beyond question a welcome one and should receive the commendation it deserves. The authors, in giving a modern clinical description of these diseases and of their care and treatment, provide us also from their own personal experiences with a critical commentary particularly with regard to the practical application of certain of the more important advances made.

In the first eleven chapters of the book, certain general aspects of the acute infectious diseases are covered including infection and resistance, hypersensitivity and allergy, transmission and diagnosis, epidemiology and control and, finally, general management and diet. The following chapters not only describe diphtheria, the exanthemas, whooping cough, and mumps but also glandular fever, hemolytic streptococcal infections, fusospirochloosis, the acute infectious diseases of the nervous system, cerebrospinal fever, acute poliomyelitis, epidemic encephalitis, as well as certain ingestion diseases, dysentery, enteric fever, undulant fever, and psittacosis, infectious jaundice, influenza, tetanus, and epidemic louse-borne diseases. Finally, there is a chapter on control of infectious diseases in hospitals.

Originality is also shown in the type of illustration, and a logical method of presentation, especially for teaching, is evident throughout the book. In this volume the practitioner, the public health officer, and the student will find a most useful text containing a wealth of information concerning the epidemic infectious diseases or fevers.

JOSEPH C REGAN

**Organized Payments for Medical Services.** A Report Prepared by Bureau of Medical Eco-

nomics of the American Medical Association Octavo of 185 pages Chicago, American Medical Association, 1939 Paper

It would stretch the imagination of a social planner to devise any scheme for the organized payment for medical services that is not described in this publication Several hundred plans for medical care of the indigent involving governmental support and medical society management are explained

The House of Delegates of the American Medical Association has endorsed cash indemnity prepayment plans but has not sought to prohibit any of its component societies from cooperating with or organizing other types of prepayment for medical service provided their character is not such as to render it impossible to give good medical service

The number and variety of the plans for medical services—operating and proposed, postpayment and prepayment, service and cash, sponsored by a medical society and other organization—give proof of the efforts that are being made to supplement the private practice of medicine, and indicate a desire to discover, by social experimentation, a solution of local medical problems

**Handbook of Bacteriology For Students and Practitioners of Medicine** By Joseph W Bigger, M D Fifth edition Octavo of 466 pages illustrated Baltimore, Williams & Wilkins Co, 1939 Cloth, \$4 25

The new edition of this excellent handbook contains short but quite complete descriptions of the pathogenic microorganisms The sections on immunology are also adequate for the purpose for which they are intended By elimination of most of the controversial material and burdensome data the author has succeeded in compiling a volume which very well meets the needs of the general practitioner

ALVIN HOLLANDER

**A Synopsis of Surgical Anatomy** By Alexander L McGregor, F.R.C.S Fourth edition Duodecimo of 664 pages, illustrated Baltimore, Williams & Wilkins Co, 1939 Cloth, \$6 00

This small book contains a wealth of useful information for surgical diagnosis and treatment In a concise manner and with an abundance of excellent diagrams it covers the field of normal and abnormal anatomy as the practitioner must know it

For quick reference it is an excellent book to have at hand

EDWARD P DUNN

**Fundamentals of Biochemistry in Relation to Human Physiology** By T R Parsons, M A Sixth edition Duodecimo of 461 pages, illustrated Baltimore, William Wood & Co, 1939 Cloth, \$3 00

The fact that this book has reached its sixth edition, coupled with the fact that the fifth edition had to be reprinted twice, is sufficient evidence of its popularity and usefulness The reason for this is immediately perceived on reading it A treatise on chemistry is expected to be dry as dust and studying it a tiresome mental exercise Instead this book reads almost like a novel and affords mental relaxation Particularly interesting are the little quotations at the

head of each chapter The author quotes not only from scientific writers but lines from Shakespeare, Nietzsche Gray, and St Paul are found which apply to the subject under discussion This serves to connect a supposedly pure science with philosophy and religion—indeed with life and living

A new chapter on sterols is particularly timely, and it will probably be greatly expanded in future editions

All in all it is a welcome revisit of an old friend

BENJAMIN DAVIDSON

**Argyria The Pharmacology of Silver** By William R. Hill, M D, and Donald M Pillsbury, M D Octavo of 172 pages Baltimore Williams & Wilkins Co, 1939 Cloth, \$2 50

The authors have covered the subject in a thorough and comprehensive manner The bibliography is exhaustive—601 references are listed They point out the necessity for more enlightenment of physicians and pharmacists regarding this complication of silver therapy The public too, should be warned on the labels of containers of silver compounds dispensed on prescription or taken as self-medication

CHARLES SOLOMON

**Psychiatry for Nurses** By Louis J Karnosh M D, and Edith B Gage, R.N Octavo of 327 pages illustrated St Louis, C V Mosby Co, 1940 Cloth, \$2 75

This is an elementary textbook for nurses which tends to present in a simple and concise though adequate manner, the salient points of psychiatry so that the pupil nurse may get an adequate appraisal of the facts in the nursing of mentally sick patients It is written with the view of enabling the nurse to familiarize herself quickly with the symptoms and treatment of the more common psychoses It tends to follow the psychobiologic school of psychiatry more than any other school A special chapter discusses shock therapy in mental diseases, and special chapters are devoted to medicolegal aspects of psychiatry and to mental hygiene

It is a good book that recommends itself to the average pupil nurse

IRVING J SANDS

**The New International Clinics Original Contributions Clinics, and Evaluated Reviews of Current Advances in the Medical Arts** Edited by George M Piersol, M D Volume I, New Series Three Octavo of 319 pages, illustrated Philadelphia, J B Lippincott Co, 1940 Cloth \$3 00

The latest issue of *The New International Clinics* contains as usual many valuable clinical articles The Review of Recent Progress is that by Cantarow in the field of the vitamins There is a symposium from the University of Pennsylvania in which the most provocative paper is that by Fitts-Hugh on "Precordial Migraine" In this issue, too, is the first half of an excellent comprehensive review of jaundice by Held and Goldbloom

MILTON PLOTZ

**Trial of Field and Gray** Edited by Winifred Duke Octavo of 302 pages, illustrated London, William Hodge & Co, 86 Hatton Garden 1939 Cloth 10/6

Among the notable British trial series, that of Field and Gray represents expediency and thoroughness with which British criminal subjects are brought to justice.

The book has been edited by an expert in descriptive sequence and covers the period from the date that the homicide was committed to the time of apprehension of the defendants and thence to the conviction of the latter by circumstantial evidence.

This case is worthy of publication because of the personalities of the counsel and that of the presiding justice, and also because of the pathetic attempts of the accused to build up an alibi.

This volume will be of interest to those who appreciate jurisprudence in medicine.

S INGRAM HYKIN

**Population, Race and Eugenics** By Morris Siegel, M D. Duodecimo of 206 pages. Hamilton, Ontario, The Author, 546 Barton Street, E., 1939. Cloth, \$3.00.

This small volume is interesting and educational to all, whether they know little or much about the subject of eugenics. Most people know too little about it, and those who give a few hours to the study of this book will find themselves amply repaid.

The author divides his work into two parts: positive eugenics and negative eugenics. The section on positive eugenics considers factors and problems as to why the more educated part of our population have fewer offspring than those who are not so well qualified, either mentally or economically, for procreation. The second part of the book deals with the negative side of the question. Here a study is made of what groups of people are not best fitted for parenthood.

What shall be done about this interesting and vital subject? Read the book and let the author give you his views. You will find it worthwhile.

WM SIDNEY SMITH

**Observations Made During the Epidemic of Measles on the Faroe Islands in the Year 1846** By Peter Ludwig Panum, M D (Translated from the Danish by Ada S Hatcher) with a Biographical Memoir by Julius Jacob Petersen, M D (Translated from the Danish by Joseph Dimont). Octavo of 111 pages. Delta Omega Society. Distributed through American Public Health Association, New York, 1940. Cloth.

This book is an English translation by Mrs Ada Hatcher from the original Danish manuscript by Dr Peter L Panum on the epidemiology of measles. A disastrous epidemic of measles occurred on the island of Faeroe in the early part of 1846. Dr Panum was chosen by the Danish government to check the raging epidemic. This island had been free from any measles invasion since the year 1761. The natural isolation of the island and the restriction of commerce more or less enforced by the Danish government resulted in the exclusion of measles for sixty-five years. But when the epidemic broke out in 1846 it attacked nearly 85 per cent of the population.

Dr Panum made a thorough study of the origin, mode of introduction, and its high contagiousness. He advocated strict isolation of the attacked and quarantine enforcement. The scattered population and a number of small islands separated by deep and swiftly running

channels made it more favorable for the strict enforcement of the quarantine.

Dr Panum made a contribution to the science of epidemiology which will remain a classic. The investigations are based upon personal inquiries and accurate investigation of the minutest details. The Delta Omega Society must be heartily congratulated for the perfect selection of this manuscript for the third series of publications of public health classics.

WILLIAM RACHLIN

**Cancer in Childhood and a Discussion of Certain Benign Tumors.** Edited by Harold W Dargeon, M D. Quarto of 114 pages, illustrated. St Louis, C V Mosby, 1940. Cloth, \$3.00.

This is a comprehensive survey of malignant diseases in infants and children contributed to by several authorities and is well illustrated by charts and photographs.

Although cancer is a rare disease in children, it is an important cause of death. The most common tumors in infancy and children are retinal glioma, Wilm's tumor of the kidney, adrenal neurocytoma, and brain tumor (medulloblastoma). The great majority are strictly embryonal. Bone sarcomas in their various forms (especially Ewing's sarcoma) show a distinct predilection for children. Hodgkin's disease, lymphosarcoma, leukemia, and allied conditions run a very malignant course.

This book should be in the possession of every pediatrician.

HARRY MANDELBAUM

**Treatment of Some Common Diseases (Medical and Surgical)** By Various Authors. Edited by T Rowland Hill, M D. Octavo of 398 pages, illustrated. Baltimore, Williams & Wilkins Co., 1939. Cloth, \$5.00.

The individual chapters of this volume contain sound, well-written advice on treatment. They are written entirely by members of the staff of the Southend General Hospital in England and are edited by T Rowland Hill who contributes the sections on anemia and cerebral vascular disease. The book's chief defect is that, as its title implies, only selected topics are touched on, and the book cannot in any sense be considered a textbook of treatment. Its value is, therefore, sharply limited. There is also some failure of proportion in that, for example, the treatment of cardiac infarction is considered in less than a page and over twenty pages are devoted to malignant disease of the pharynx—a chapter, however, which is by far the best of all.

MILTON PLOTZ

**Massage and Remedial Exercises in Medical and Surgical Conditions** By Noël M Tidy. Fourth edition. Octavo of 458 pages, illustrated. Baltimore, Williams & Wilkins Co., 1939. Cloth, \$5.25.

This fourth edition closely follows the third. It reviews fractures, dislocations, and diseases and injuries of the muscular, nervous, and osseous systems, including their aftercare and emergency and physical methods of treatment.

A short description follows each type of injury and the surgical technic to be employed.

The chapters on diseases of the bones and joints, fractures and dislocations are thoroughly discussed.

It is a handy reference book for those prescribing aftercare in orthopedic and traumatic surgery

JOSEPH I NEVINS

**Textbook of Public Health** (Formerly Hope and Stallyhrass) By W M Frazer, M D, and C O Stallyhrass, M D Tenth edition Octavo of 504 pages, illustrated Baltimore, Williams and Wilkins Co, 1940 Cloth, \$6 50

The tenth edition of the book that began its career in 1874 gives a comprehensive view of public health as it is organized in England at the present time. Chapter I gives the official organization of public health facilities in the country

The several chapters on environmental sanitation cover the usual subjects found in such textbooks published in this country, but much more elaborate technical detail is given

The space given to such subjects as town planning and housing indicates that such activities occupy an important place in public health administration in England

Hospital administration is also given considerable attention

An interesting feature of the book is the subject matter of the concluding chapter which deals with the medical aspects of civil air defense

F L MOORE

**Psychology and Psychotherapy** By William Brown, M D Fourth edition Octavo of 260 pages Baltimore Williams & Wilkins Co, 1940 Cloth, \$4 75

This is the fourth edition of a work that first appeared in 1920 It has had a wide circulation and has been generally acknowledged as a practical presentation of the subject of psychotherapy as practiced by a distinguished and experienced psychiatrist He has surveyed the sphere of various theories of psychotherapy and has gathered from each those vital points which he felt could be utilized for the benefit of the patient and has woven it more or less into a method of his own. The book deals with psychotherapy of common neurotic disorders encountered in everyday practice and also with other subjects such as the psychology of peace and war, the psychology of personal influence, the psychoneuroses of war, and the relation of mind to brain

It is a valuable book that is challenging in many ways and will be found useful not only by psychiatrists but also by the general practitioner of medicine It is, therefore, highly recommended for the progressive doctor as well as for the specialist in mental disorders

IRVING J SANDS

**The Life and Death Instincts** (The Vita and the Fatum) By Arthur N Foxe, M D Octavo of 64 pages New York, Monograph Editions, 1939 Cloth, \$2 00

This very small volume will hardly interest the general practitioner However, it does contain thought-provoking material for the psychoanalyst, even though the latter may not entirely subscribe to the author's deductions

The writer was a psychiatrist in a prison for several years and analyzed many of the inmates according to the Freudian technic

As an interesting attempt to explain the de-

velopment of the "criminoses" from the psychoanalytic point of view it is worth reading

JOSEPH L ABRAMSON

**Trattato Di Biotipologia Umana Individuale E Sociale** By Professor Nicola Pende Quarto of 665 pages, illustrated Milano, Dottor Francesco Vallardi, 1939 Paper

The author has coined a new word to describe not only the different forms but also the character of each individual. He defines "biotypeology" as that branch of medical science which deals with all the complex vital manifestations (i e., the anatomic, functional, endocrinologic, and psychologic), from which we can recognize the structural dynamic type of each individual (i e. the particular characteristics of each individual that differentiate him from another) In other words, "biotypeology" is the science of the architecture and engine of each individual human body and includes the study of individual and racial hereditary factors, the surroundings that influence an individual during the formative years after birth, the action of hormones, vitamins, electrolytes, etc, and the dominating neuro-psychologic factors

The author reviews thoroughly the historical background of the subject, and, although he describes the work of previous students, the book is devoted almost entirely to his own method of study to diagnose the individual biotypes He does this in great detail, giving charts and forms used for the study of each individual from birth to adult life

A considerable portion of the book is devoted to the application of "biotypeology" to clinical medicine and a small portion to "biotypeology" as related to criminology

This book may be called the biology of man, in other words the study of his morphology, physiology, and psychology The author is a pioneer in this work, and the book indicates a tremendous amount of effort devoted to the subject It is a valuable addition to the literature and should prove useful as a work of reference

J B L'EPISCOPO

**Accepted Foods and Their Nutritional Significance** Containing Descriptions of the Products Which Stand Accepted by the Council on Foods of the American Medical Association Octavo of 492 pages Chicago, American Medical Association, 1939 Cloth, \$2 00

*Accepted Foods and Their Nutritional Significance* contains descriptions and detailed information regarding the chemical composition of more than 3,800 accepted products, together with a discussion of the nutritional significance of each class of foods The book provides also the Council's opinion on many topics in nutrition, dietetics, and the proper advertising of foods

This book will be a welcome reference book for all persons interested in securing authoritative information about foods, especially the processed and fabricated foods which are widely advertised

**Epidemiology in Country Practice** By William N Pickles, M D Octavo of 110 pages, illustrated. Baltimore, Williams & Wilkins Co, 1939 Cloth, \$2 50

This original little book is the result of the observations made and recorded over many years by Dr Pickles on certain epidemic outbreaks that he has observed in his practice in Wensleydale, England. The primary object of the author is to stimulate other country doctors to keep records of epidemic disease by impressing on them the unique advantages they enjoy in "natural-history" investigation of such diseases, as well as to show how laymen may be interested and may assist in these observations.

The book contains eight chapters and a reference bibliography. In Chapter 4 the commoner diseases are considered, grouped together are influenza, measles, scarlet fever, whooping cough, and mumps. Chapter 5 is devoted to the epidemiologic relationship of chicken pox and shingles. Chapters 7 and 8, dealing with epidemic catarrhal jaundice and epidemic myalgia, respectively, are of much interest and contain epidemiologic and clinical data of importance.

The book shows clearly that the country physician can make significant contributions to our knowledge of epidemiology.

JOSEPH C REGAN

**On Oxidation, Fermentation, Vitamins, Health and Disease** By Albert V Szent-Györgyi, M D (Abraham Flexner Lectures Series Number Six) Octavo of 109 pages. Baltimore, Williams & Wilkins Co, 1939. Cloth, \$2.00.

This volume contains the five Abraham Flexner lectures delivered by Dr Szent-Györgyi at Vanderbilt last year and summarizes his experiments in the field of biologic oxidation during the past fifteen years. The lectures are "Principles of Biological Oxidation," "Respiration of Muscle," "On Fermentation and Intermediary Metabolism," "Vegetable Oxidation," and "Vitamins, Health and Disease." They comprise required reading for all interested in metabolism and the vitamins.

MILTON PLOTZ

**Sexual Disorders in the Male** By Kenneth Walker, F.R.C.S., and Eric B. Strauss, D.M. Octavo of 248 pages, illustrated. Baltimore, Williams & Wilkins Co, 1939. Cloth, \$3.00.

Kenneth Walker has rewritten his book with the cooperation of Eric B. Strauss who is a specialist in medical psychology.

Impotence is the main subject, and it is fully and competently covered. Other ailments discussed are premature ejaculations, pollutions, masturbation, homosexuality, and fetishism.

The authors are convinced that the cause of these disorders in the vast majority of cases is functional, and their therapeutic efforts are, therefore, mainly psychologic. They approve of replacement therapy with testosterone if it is indicated. They are critical though of other physical therapeutic techniques, as, for example, of Hühner's silver nitrate installations, of Stenmach's vasoligations, and of Lowsley's plication operations.

The reader will be impressed by the vast experience and the sane judgment of the senior author. Because of this the book is in a class by itself and should be read by every medical practitioner.

There is a concise but up-to-date bibliography.  
H L WEHRBEIN

**Heil Hunger! Health Under Hitler** By Dr Martin Gumpert. Translated from the German by Maurice Samuel. Octavo of 128 pages. New York, Alliance Book Corp, 1940. Cloth, \$1.75.

This isn't just one more anti-Nazi propaganda volume. The author has analyzed national statistics and activities as officially published or gathered from medical statistics appearing in publications published in Germany, apparently without propaganda purposes. His 198 references should enable anyone to make a similar analysis.

It has been assumed by many that the claim of Hitler that the totalitarian state completely regimented leads the people to health and physical strength is a fact. Dr Gumpert states in his foreword that he is revealing to American readers that dictatorship is a sickness which drives all concerned to inevitable physical breakdown and proceeds to show that six years of Nazi rule have achieved

"an increased death-rate, a falling birth-rate, a declining fecundity, an increase in rickets, the physical incapacity of the youth, 90 per cent flat feet, a growing criminality, an increase in drunkenness, a doubling of mental diseases, an increase in venereal diseases, a rise in tuberculosis for man and beast, an increase in epidemics, food poisoning, puerperal fever, an increasing mortality rate in the hospitals, a piling up of fatal accidents, a decline in working capacity, new occupational diseases, injury by compulsory sports, an increase in female labour, undernourishment, a shortage of vitamins, misery among the farmer class, the ruin of science, the decline of military power."

This is a book that will greatly interest the medical reader.

ALEC N THOMSON

**The Ophthalmoscope and Studies of the Fundus Oculi in Important Pathological Conditions** Octavo of 32 pages, illustrated. Southbridge, Massachusetts, American Optical Company, 1939. Paper.

The name of no individual author appears on the flyleaf of this pamphlet published by the American Optical Company. The foreword says among other things that the publishers believe it is to be an "important contribution to current literature."

The reviewer does not feel that the aim is accomplished. The first few pages are devoted to generalities of doubtful value and little interest. Next follows a few words about the construction of the ophthalmoscope and the results of its use.

Eleven pages, including illustrations, are devoted to a normal and pathologic eyeground features. The illustrations are reproduced so poorly as to be almost valueless.

The reviewer cannot recommend this pamphlet as a worthwhile contribution, and it has no appeal as good advertising matter.

JOHN N EVANS

# NEW YORK STATE JOURNAL OF MEDICINE

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## Editorial

### As a Matter of Fact

In the *New York Times* of December 17, 1940, Mrs. Roosevelt is reported to have said that the rejection of men physically not fitted for military service would "give impetus to the movement for a comprehensive and nationwide health program. *The discovery of the need is the first step toward creating a demand the rejection of men for service dramatizes the need*"\*

A nationwide health program, comprehensive, well considered and planned, devoid of political considerations, based on demonstrable need and adjusted to the ability of the people to pay for it, would unquestionably have the support of the medical profession. Speaking throughout the Nation in 1940 Dr. Nathan B. Van Etten, president of the A. M. A., has said and reiterated "In advocating a new health program, I believe that a National Department of Health with a Secretary of Health in the cabinet is as important as a War Department with a Secretary of War.

"Defense against disease is as important as defense against a military enemy."

On the need for a new health program there is general agreement, and this JOURNAL advocates it and will support such a movement to the limit of its ability and influence. Mrs. Roosevelt says

"*The discovery of the need is the first step toward creating a demand*"\*

With this idea we can agree. But we must insist that such evidence as is ad-

duced in support of the need be factual. If Mrs. Roosevelt will base her discovery of the need on Dr. Van Etten's statement "Our mental unfitness is revealed by 500,000 hospital beds occupied by the institutionalized insane. Our physical unfitness by a half million active syphilitics," her discovery will be solidly based on fact.

But as to the statement "*the rejection of men for service dramatizes the need*," we can concede only that it is dramatic. For, on December 17, 1940, Colonel McDermott, director of the Selective Service in New York City, released to the press an analysis of the causes for rejections compiled by the Medical Division which gives the details of the medical causes for rejection by 120 local boards and the local induction centers. This sampling of registrants comprised 1,643 men of whom 1,213 were accepted for full military duty. There were 430 rejected as disqualified for full military duty or designated for limited duty only. For the information of our readers we publish herewith the causes for rejection of the 430 men.

Causes for Rejections	Primary	Secondary
Underweight	26	17
Overweight	11	12
Deficient height	2	1
Poor chest expansion	0	5
Defective vision	74	32
Chronic otitis media	19	4
Impaired hearing	4	9
Nasal defects	3	5
Infected tonsils	0	3
Speech defect	0	5
Insufficient teeth	88	20

\* Italics ours.—Editor

Causes for Rejections	Primary	Secondary
Disease of gums	4	1
Deformity of jaw	1	0
Rheumatic heart disease	15	2
Valvular heart disease	30	7
Myocarditis	1	2
Hypertension	8	21
Tachycardia	3	12
Congenital heart disease	2	1
Hypotension	0	1
Enlarged heart	3	9
Systolic heart murmur	3	6
Angina pectoris	1	0
Hernia	16	9
Peptic ulcer	3	1
Hemorrhoids	0	10
Pilonidal sinus	1	1
Varicocele	4	6
Hydrocele	0	3
Disease of skin	1	1
Deformity of head	1	0
Deformity of spine	4	12
Loss of limb	4	0
Loss of toe or finger	1	1
Paralysis of limb	18	3
Defective joint	5	1
Deformity of limb	10	5
Varicose veins	2	7
Flat feet	1	16
Osteomyelitis	2	0
Hammer toe	0	1
Pulmonary tuberculosis	15	0
Chronic bronchitis	2	1
Bronchial asthma	1	0
Pleurisy	1	0
Spontaneous pneumothorax	1	0
Hemoptysis	0	1
Deformity of chest	0	3
Undescended testicle	2	1
Syphilis	6	90
		(Positive Wassermann)
Doubtful Wassermann	0	26
Gonorrhea	0	1
Albumin in urine	0	2

We shall draw no conclusions from this sampling, we present it merely in evidence, marked Exhibit A, for study. As a guide, let us ask

1 Does this sampling even remotely suggest any great need for a health program?

2 In the judgment of any competent physician do the rejections by cause indicate that more than a very small percentage of the defects could have been prevented by previous medical care or attention?

3 Are not the majority of the rejections due to causes beyond the help of medical care? Are they not of a kind which even the most extensive health program could not obviate?

If statistics as they become available from the rest of the Nation parallel this regional sampling, even the most expert dramatists will apparently be able to find little material for their art in the rejection of men as unsuited for military service. However, as they wait for further reports from Selective Service headquarters, may we call their attention again to the 500,000 hospital beds occupied by the institutionalized insane and the half-million people suffering from active syphilis mentioned by Dr. Van Etten? Surely here is stark tragedy enough to dramatize the need for an effective national health program without going further afield, but, if go they must, then how about the insane who are not institutionalized? Or, are there none here?

## Physical Education

Medicine has a lively interest in the subject of physical education. In the State of New York, physical instruction in the public school system is a function of the State Department of Education of which a special division is responsible for its administration. Instruction is given in all the local schools to all the children of the various school districts who are not disqualified to receive it. Presumably there is a statewide program promulgated

by the Department based on a rational philosophy and founded in the need of American youth for physical instruction.

What is the program? How broad is it? What are its objectives? A goodly number of physical instructors are working daily in a vast number of schools throughout the state to help prepare a great number of children for something. For what? For an adult life to be spent largely in riding comfortably in motor

vehicles, airplanes, trains, and busses? For an adult life otherwise devoted to operating machine tools, typewriters, filing systems, dictaphones, or Diesels? For adult evenings playing bridge, going to the moving pictures, drinking at bars, or dancing on floors so crowded as to make a subway guard blush? Or perhaps for Army or Navy life?

Our system of American education in general has been and possibly still is based largely on the philosophy of success. According to Dr E N Ferris "it covers the ground without cultivating anything in it." What does it contribute toward making life endurable, even enjoyable, for those who consider themselves or are considered by others as failures? Dr Carrel and many thinking psychologists emphasize the fact that mere muscular efficiency is inadequate to living. How then is the system of physical education in our public

schools to be integrated with the other factors—mental, spiritual, and recreational? By an expansion and broadening of the program of physical education? Perhaps Dr Ehrlanger of Columbia University might have something to contribute to a discussion of this nature.

The national emergency is forcing upon us the necessity for serious discussion of objectives. A national health program is at least in contemplation. In such a program, the physical educators of the various states will play a conspicuous part as will the physicians of the Nation. Is it not time for both these groups to define more clearly the objectives and methods by which the national interest will be more effectively served and the individual be educated by a curriculum which not only covers the ground but which also cultivates something in it?

## Home Sweet Home

One by one our old-fashioned, cherished illusions fall like thin slices of bologna before the keenly cutting edge of factual research. Home and mother! To how many childish minds have these words conjured up a picture of safety, security, comfort? Yes, and to how many adult imaginations, parched by desert heat, lost in dread jungles, lonely in countless cruel, throbbing cities, or parked against some sordid, tear-splashed bar have they brought a nostalgic, sentimental comfort? Possibly even to you, gentle reader, but not to the United States Public Health Service.

"More than 23,000 deaths occur annually as a result of accidents in the house, or nearly 2 per cent of all deaths in the United States and 23 per cent of accidental deaths (all places of occurrence). Although outranked by certain major causes of death, home accidents are the cause of more deaths than diphtheria, scarlet fever, whooping cough, and measles combined, of more than appendicitis, of nearly as many deaths as diabetes, of over two-thirds as many deaths

as automobile accidents, and of over a third as many deaths as tuberculosis,

a large proportion of these home accidents occurred among children and adults in the most productive ages, many of the persons surveyed had permanent orthopedic impairments or were blind as a result, housewives themselves sustain one-third of all serious home accidents."\*

Here is a problem of major seriousness, the gravity of which, it seems to us, has not been recognized by physicians. We urge our readers to study the entire report carefully, especially the tables showing the accident rate in relation to income levels. There is here a severe indictment of housing conditions with appalling conclusions to be drawn. It is inevitable that with the speed-up of industry the industrial accident toll should rise sharply. There is a means, however, of combating this rise in the established safety-first campaigns—by education and factory safety inspection. No such programs

\* Accidents in the Urban Home as recorded in the National Health Survey. Pub Health Rep 55 No 40 pp 2083-2084.

exist to our knowledge by which accident-prevention in the home is being publicized Why should such a campaign not be undertaken?

Here is a fertile field for the exercise of the radio mandate by the Society

There are few homes to which the radio does not permeate It seems to us that the opportunity is open for good, dramatic presentation of this material under the sponsorship of the profession

## Stilbestrol in a Sex Offender

It seems premature to comment upon the action of an estrogenic substance which is still under investigation by the Council on Pharmacy and Chemistry of the American Medical Association However, the publication of Dunn<sup>1</sup> in a recent issue of the *J.A.M.A.* is worthy of comment

Others have recorded the action of stilbestrol on gynecomastia, on the liver, and on several phases of the menstrual cycle Untoward symptoms have been reported, notably gastric distress, lassitude, headache, and skin eruptions

Dunn treated with stilbestrol a male sexual criminal who was sentenced to prison for repeated offenses against minor females Examination of this individual showed a high urinary secretion of testicular hormone and the gonadotropic factor This excluded the cen-

tral nervous system as the exciting cause Physical examination revealed an oversized penis and testes

Upon administration of 5 mg of stilbestrol daily until a total of 480 mg was taken over a period of ninety-six days, a sensitiveness in both nipples and a lump in each breast were evident This enlargement of the breast corresponded to the development produced in young females who had taken stilbestrol Of greater moment is the therapeutic effect which the author achieved The penis and testes were reduced in size by one third "The patient states that there is an absence of libido and that masturbation does not produce an ejaculation of seminal fluid" This alteration from a criminal hypersexual to what, for this individual, might be considered a hyposexual state by the use of stilbestrol, is a valuable contribution to forensic medicine

<sup>1</sup> Dunn, C W *J A M.A.* 115 2263 (Dec 28) 1940

## Psychic Esophageal Spasm

The somatic responses to emotional upsets are indeed varied More and more, we are beginning to realize that psychic factors can account for a multitude of symptoms that ordinarily are attributed to organic disorders In a previous issue of the *JOURNAL*,<sup>1</sup> we alluded to the work of Stokes, Beerman, and Ingraham<sup>2</sup> concerning the psychoneurogenic component in the allergic states Faulkner<sup>3</sup> has visualized bronchoscopically alternate widening and contraction of the bronchi in response to suggestion

By further study, Faulkner has shown that alterations in the functional activity and anatomic status of the esophagus can be brought about through suggestions that call for such emotional response as grief, anxiety, fear, and anger Conversely, these spastic phenomena can be relieved by inducing emotions of happiness, enthusiasm, and security

He has studied 13 cases, all of which were referred for esophagoscopy because of symptoms referable to interference in swallowing or to recurrent vomiting of blood He distinguishes five groups, none of which is clearly separable from the others In all of them, spasm could be either aggravated or relieved depending upon the type of emotion aroused All the patients experienced a sense of insecurity or impending danger, either religious, social, marital, or financial The esophageal spasm stands in direct relationship to the intensity of the psychic problem That this reflex phenomenon is due to psychic factors is shown by the fact that problems which are of no vital interest to the subject will elicit no esophageal reflex

The work of Faulkner indicates the necessity for detailed study by esophagoscopy of all cases wherein a dysfunction of this structure is evident While strictures, ulcers, malignancies, and foreign bodies are the common causes of dysphagia it must be borne in mind that psychic episodes may produce similar

<sup>1</sup> N Y State J Med. 40 1764 (Dec 15) 1940

<sup>2</sup> Stokes J H., Beerman, H., and Ingraham, N R. *Am J M.Sc.* 200 560 (Oct.) 1940

<sup>3</sup> Faulkner Jr, W B *Am J M.Sc.* 200 796 (Dec.) 1940

clinical pictures Undoubtedly, other viscera are subject to similar emotional stimuli

Where sedatives and antispasmodics such as atropine bring no relief, medicinal therapy will

merely prolong the identification of the etiologic factor responsible for the esophageal disturbance Esophagoscopy, skillfully performed, differentiates the organic from the inorganic lesions

## Correspondence

THE CONNECTICUT STATE MEDICAL JOURNAL

54 Church Street, Hartford, Connecticut

December 3, 1940

To the Editor

Your editorial, "Coals to Newcastle," hit the bull's eye all right Let me tell you how much I appreciate your complimentary remarks on our Medical Preparedness Number When I finished with the dummy and had everything put to bed that belonged in it I felt that it was rather a poor job, not nearly as good a one as I had hoped to turn out Several of our prospective writers for that number, however, did not come across for one reason and another

About the question of insurance for the doctor during wartime, or, in fact, during the present peacetime training I was really quite concerned with your comments on the subject as they seemed too misleading to allow to go Many other State Journals have picked up your editorial and copied it I hope in the January number to have the benefit of our insurance talent in this city expressed in no uncertain terms so that the matter may be clarified In all this I have only the greatest respect for you and the way you are carrying on in a position that I know is anything but easy

Just by way of a little comeback and to remind you that other printers sometimes forget their quotation marks I submit the following

C.S.M.J 4 399

We learn from the Journal of the South Carolina Medical Association that there are many small communities in that State interested in finding good doctors who will locate in their midst For the past two years the requests have been extremely urgent and only recently it was noted that the South Carolina Medical Journal carried an advertisement announcing a field open to a young physician "who had had and is inclined toward surgical experience" This opportunity may appeal to one who dislikes the rugged New England winters South Carolina is making rapid strides in scientific medicine

N.Y.S.J.M 40 1585

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Best regards Your Journal has improved 100 per cent since the reorganization

Sincerely yours,

STANLEY B WELD, M.D., Editor

## 1941 ANNUAL MEETING

Attention is called to the change in dates for the 1941 Annual Meeting of the Medical Society of the State of New York It will be—and thus is final—on April 28, 29, 30, and May 1, in Buffalo, at the Hotel Statler

# Suggestions for Contributors to the NEW YORK STATE JOURNAL OF MEDICINE

THE NEW YORK STATE JOURNAL OF MEDICINE asks its contributors to follow the suggestions listed below in the preparation of their articles. In this way they will greatly facilitate the expeditious publication of the JOURNAL. These suggestions have been devised in order to save correspondence, avoid return of papers for changes, minimize the work of preparation for the printer, and save the high costs of corrections made on galley proof.

**Size of Articles.**—It is earnestly desired that scientific articles shall not exceed ten JOURNAL pages at the outside. Even that number of pages tends to lower reader interest. An average of five or six seems to be the most desirable from this point of view. Calculation can readily be made by multiplying the number of double spaced typewritten manuscript pages by the fraction two-fifths.

**Manuscripts.**—Papers must be typewritten on one side only of white sheets consecutively numbered, and be double spaced with one-inch margins. They should be prepared with great care so as to be typographically correct. All headings, titles, subtitles, and subheadings should be typed flush with the left-hand margin.

**Titles.**—The title should be *brief* and typed in capital letters. The subtitle can be longer and should be typed in cap and lower case letters. Under the title, or subtitle, if there is one, should appear the name of the author and city in which he lives.

**Subheadings.**—Subheadings should be inserted by the author at appropriate intervals.

**References.**—It is the unflinching practice of the NEW YORK STATE JOURNAL OF MEDICINE to use specific "references" rather than "bibliography." There should appear in the text reference numbers, typed above and to the right of the word to which there is a reference. A list, consecutively numbered, should include the following items.

- a. **Books**—author's surname followed by initials, title of book, edition, location and name of publisher, year of publication, volume, and page number. Thus, Osler, W. Modern Medicine, ed 3,

Philadelphia, Lea & Febiger, 1927, vol. 5 p 57

- b. **Periodicals**—author's surname followed by initials, name of periodical, volume, page, month (day if necessary), year of publication. Thus, Leahy, Leon J. New York State J. Med. 40: 347 (Mar 1) 1940.

**NOTE.** The JOURNAL does not include titles of articles.

**Case Reports.**—Instead of abstracts of hospital histories, authors should write these reports in a narrative style with properly completed sentences. All unimportant details should be deleted with such general negative statements as fit the case.

**Tables.**—While tables are very useful on lantern slides in the reading of papers, they fail of this purpose to a large extent in the printed page. For that reason it is urged that they be incorporated in the text.

**Illustrations.**—These should be kept to the minimum necessary to make clear the points to be registered by the author. In some instances they are imperative to proper understanding, in others they are merely picturesque.

Where illustrations are to be used they should accompany manuscripts and each should always be referred to in the text, preferably by number. Drawings or graphs should not be larger than 12 × 16 inches, and must be made with jet black India ink on white paper or tracing cloth. *Do not use typewriter for lettering.* The smallest lettering on 8 × 10 inch copy should be no less than 1/4 inch high. Cross-section paper (white with black lines) may be used, but should not have more than 4 lines per inch. If finer ruled paper is used, the major division lines should be drawn in with black ink, omitting the finer divisions. In the case of finely ruled paper, only blue-lined paper can be accepted. Lettering and all markings must be large enough to be readable after reduction. Mail rolled or flat. Photographs should have clear black and white contrasts and be on glossy white paper.

Whenever possible "crop" photographs, i.e., mark portion that can be excluded when reproduced. Crop marks should be on *margin* of photographs—not on the photographs.

It is important to mark the top of the illustration on the back, also its number as referred to in the text, thus, Fig 1, 2, and the name and address of the author.

**Legends** should be typewritten on one sheet of paper and attached to the illustrations.

# SPECIFIC TREATMENT OF PNEUMONIA

With Special Reference to Chemotherapy and Antipneumococcus Serum\*

EDWARD S. ROGERS, M.D., Loudonville, DAVID D. RUTSTEIN, M.D., and  
ALEXANDER D. LANGMUIR, M.D., Albany, New York

IT IS essential for the physician to be acquainted with the field of usefulness and with the limitations of two agents in the specific treatment of pneumonia and other pneumococcal infections. These are drugs of the sulfonamide group and specific antipneumococcus serums. The drugs that have been of greatest value in the treatment of such infections are sulfapyridine and sulfathiazole.

Even though the use of chemotherapy alone may be intended, it is an essential of good treatment to be prepared to give serum, if necessary, by obtaining sputum for typing and blood for culture before drug treatment is begun. If severe toxic manifestations necessitating interruption of drug therapy occur, if the patient is exhausted from nausea or vomiting, if the response to the drug is not satisfactory, or if it is impossible to secure adequate intake of the drug, the switch to serum therapy can then be made with a minimum of delay.

## Chemotherapy

**Indications**—In the absence of definite contraindications, sulfapyridine or sulfathiazole should be given to every case of pneumonia as soon as the diagnosis has been established and specimens of sputum and blood have been obtained for submission to a laboratory for typing and culturing. Drug treatment has a particular advantage in the treatment of infections in which multiple pneumococcal types occur and in some instances in which mixed infections of pneumococci and other microorganisms are found. When pneumococci cannot be obtained on careful bacteriologic examination, a therapeutic test with either sulfapyridine or sulfathiazole for thirty-six to forty-eight hours should be attempted. If no benefit occurs, drug therapy should then be discontinued.

From the Bureau of Pneumonia Control, Division of Communicable Diseases, New York State Department of Health, Albany. The authors are particularly indebted for the suggestions and criticisms of the following authorities in pneumonia: Drs. Jesse G. M. Bullowa, Russell L. Cecil, Lloyd D. Felton, Maxwell Finland, Colin MacLeod, and Norman Plummer.

\* Due to the rapid development of both serum and chemotherapy, the following discussion regarding their relative merits must be considered as somewhat tentative, and changes in point of view may be indicated as more information becomes available.

At present there is insufficient information to establish the relative superiority of sulfapyridine or sulfathiazole. While they appear to have equal therapeutic effect, they display characteristic differences which usually serve to direct their choice in a given case. Although sulfanilamide may have some effect, especially in type III pneumococcal pneumonia, dramatic response to its use such as is seen with sulfapyridine, sulfathiazole, or serum is rare. Sulfanilamide is less toxic than the other drugs and might be recommended for the treatment of pneumonia due to hemolytic streptococcus. Although the hemolytic streptococcus may cause pneumonia, it is frequently found in normal throats or in the sputum as a contaminant. Since sulfapyridine is equally effective in the treatment of infections with hemolytic streptococcus, in general it is preferable not to use sulfanilamide in the treatment of an acute pneumonic infection where there may be the slightest chance of its being caused by the pneumococcus. Pneumonias due to *Staphylococcus aureus* should be treated with sulfathiazole.

**Contraindications**—A history of serious toxic reaction to any of the drugs of the sulfonamide group constitutes a major contraindication to the use of sulfapyridine and sulfathiazole. Chemotherapy also may be contraindicated in patients with renal disease, especially in the presence of nitrogen retention, in patients with persistent vomiting or in whom pneumonia develops after an operation on the gastrointestinal tract where vomiting might be dangerous, or in those with hepatic disease. These contraindications must be considered in relation to the severity of the illness and the effectiveness of the alternate forms of therapy. There are very ill patients for whom serum therapy either is not available or is ineffective and in whom the dangers of a drug reaction must be risked in order to attempt to save life. Pre-existing severe anemia is not a contraindication, provided the hemoglobin is maintained at a safe level by repeated small transfusions.

**Dosage**—The oral dosage of both sulfapyridine and sulfathiazole is fairly well standardized—an initial dose of 2 Gm. for the average adult repeated in four hours and 1 Gm. every

four hours thereafter \* Patients receiving sulfathiazole tend to have lower blood levels of the drug than those receiving sulfapyridine, although the lower level of the former seems to be equally effective. In general, sulfathiazole tends to become acetylated less than does sulfapyridine. This would appear to be an advantage since the acetylated form of either is therapeutically inactive.

It is important to continue the administration of either drug for thirty-six to forty-eight hours following apparent recovery by crisis or lysis. Premature cessation of drug treatment may be followed by a recrudescence following excretion of the drug through the kidneys. The temptation to interrupt drug therapy as soon as the pulse and temperature approach normal levels must be avoided, as fatalities that might have been prevented occasionally occur under these circumstances. Since prolonged administration of small amounts of these chemotherapeutic agents may allow the infecting microorganism to become drug fast, termination of drug treatment should be abrupt. If a recrudescence of the infection occurs following interruption of therapy, treatment should be resumed with a large dose (4 Gm.).

Most patients benefited by chemotherapy will show rapid improvement. Neither drug should be continued for more than seventy-two hours in the absence of any response, as the danger of toxic reactions rapidly increases. If an obviously favorable response does not follow eighteen to twenty-four hours of adequate therapy with sulfapyridine or twenty-four to thirty-six hours of sulfathiazole, it is not likely to do so. Serum therapy should be started at the first indication that drug treatment alone may not succeed, especially in the presence of pneumococci of types I, II, IV, V, VII, VIII, or XIV. In drug refractory cases of other pneumococcus types, especially when such types are found on indirect (mouse) sputum examination, decision as to therapy may be difficult. Serum for the type suggested may be tried, but it is desirable also to determine the amount of free drug present in the blood of the patient. If the level is below 4 mg. per hundred cubic centimeters, the administration of the drug should be continued with larger dosage.

**Concentration in the Blood**—The absorption, excretion, and degree of acetylation of these drugs are irregular and unpredictable in differ-

ent patients. It is considered desirable to have a blood concentration of the "free" drug of 4 mg. per hundred cubic centimeters or more, although many patients recover with lower levels. Nausea and vomiting may make it difficult to estimate the absorption of the drug, and variations in renal efficiency make it equally difficult to predict the excretion.

A sample of 4 milliliters of oxalated venous blood is satisfactory for the determination of both the free and total drug levels. A considerable number of diagnostic laboratories in New York State are now in a position to make such quantitative determinations. Physicians should inquire of their local laboratory director where tests of this nature can be undertaken.

**Parenteral Administration**—Although oral medication is satisfactory for most patients, there are soluble derivatives of these drugs (sodium sulfapyridine and sodium sulfathiazole) which can be given parenterally. Parenteral administration should be used only (1) when the patient is so acutely ill that it would be unwise to wait the necessary few hours for the orally administered drug to attain an adequate blood concentration, (2) when there is failure of absorption of the drug after adequate oral dosage, or (3) when there is intractable vomiting. Routine use of these salts or their continued administration throughout the course of the illness is not recommended. If the intravenous dose of 4 Gm. for a 150-pound adult is supplemented by an oral dose of either of these drugs of 1 Gm. every four hours, an adequate level of the drug will be maintained in most cases.

After calculating the necessary amount of the drug depending upon the body weight of the patient, the proper amount of the dry powder is weighed out under sterile precautions and dissolved in sterile distilled water to make a 5 per cent solution. The injection may be started with a small amount of sterile normal salt solution in order to make certain that the needle is well within the vein and that no fluid is leaking out into the subcutaneous tissues. The solution of sodium sulfapyridine may then be added and allowed to run in slowly (a period of twenty minutes is advised).

The last portion of the drug solution is then washed through the intravenous set with a small amount of salt solution. *No other solvent such as glucose solution or blood for transfusion should be used.* Use of the latter has been associated with sudden fatality.

\* An alternate method sometimes advised is the initial administration of 4 Gm. followed by 1 Gm. every four hours.

It has been reported that dilute solutions of these salts (0.5 per cent) may be given by hypodermoclysis without local reactions, and it is claimed that such administration prolongs the period during which an effective blood level may be maintained. Rectal administration also has been reported, but it is not recommended as it is impossible in the usual practice to determine the total amount of drug absorbed. *Intrathecal administration of the sodium salts of either sulfapyridine or sulfathiazole in the treatment of meningitis must not be used* as it has been followed by thromboses of the vessels in the spinal cord.

**Toxic Reactions**—The common toxic effects of both drugs are now fairly well recognized. Most common are nausea, which occurs in about two-thirds, and vomiting, which occurs in about one-third of the patients receiving sulfapyridine. It is usual to find that the patient feels poorly and depressed during the entire period of drug administration, even though the acute symptoms of the disease may have subsided. The nausea and vomiting following sulfathiazole therapy is less frequent and less severe, and the mental depression is not so marked. These symptoms usually are not avoided by parenteral administration. Some alleviation occasionally is afforded by administering the drug in powdered form in milk or mixed with semisolid food. In some patients it is almost impossible to continue oral therapy without extreme discomfort. In other patients, vomiting and even nausea subside while the drug is being taken regularly. These symptoms are not dangerous in themselves, but their secondary effects may be, since their occurrence often makes it psychologically difficult to continue the treatment of a patient who has apparently recovered but in whom the danger of recurrence still might be present if drug administration were to be stopped. Moreover, nausea and vomiting occasionally make it difficult to maintain an adequate fluid intake.

Hemolytic anemia of varying severity infrequently follows the use of these drugs and can be detected by careful clinical examination or hemoglobin determinations. Anemia associated with sulfapyridine or sulfathiazole administration probably is less frequent than that associated with sulfanilamide. When mild it usually can be controlled by transfusions without the interruption of drug therapy, but when severe the immediate cessation of drug therapy is indicated.

Care should be taken in interpreting the significance of a low white count. Leukopenia

without granulocytopenia is not uncommon. It may occur early and usually is transient if drug administration is interrupted. The occurrence of leukopenia without granulocytopenia prior to drug administration does not contraindicate the administration of these drugs, especially if no other therapy is available. It may even be advisable to continue drug administration, since such circumstances indicate a poor prognosis. On the other hand, a sudden leukopenia associated with granulocytopenia occurring during drug administration contraindicates further drug therapy. Such reactions rarely occur during the early period of drug administration. However, after the third or fourth day of drug treatment, daily counts of the white blood cells should be made if this serious complication is to be recognized in time. A preliminary white count and blood smear before starting drug therapy may prove essential to the interpretation of subsequent changes.

The diagnosis of drug fever often is difficult. It occurs late in the disease when other confusing conditions might exist, such as focalized infection, extension of the pulmonary process, or serum sickness if specific serum has been used. The drug may be continued with caution if the occurrence of the fever is associated with the reappearance of the extension of the pulmonary process or when there are signs of fluid in the chest, leukocytosis, or other evidence of focal complications which are, in themselves, sufficient to account for the fever. In the absence of such evidence it may be necessary to discontinue the drug in order to determine its relationship to the fever.

Drug rashes have been noted following administration of sulfapyridine and sulfathiazole. In the case of sulfapyridine these usually are morbilliform and occasionally scarlatiniform in nature. Rashes are more frequent and varied among patients receiving sulfathiazole. Especially noteworthy is the occurrence of a rash which cannot be differentiated from erythema nodosum. A careful daily examination of the patient's skin should be made. A rash without other toxic manifestations is felt to constitute a relative contraindication to further chemotherapy. It is occasionally possible to interrupt drug administration until the rash disappears and then reintroduce therapy without a recurrence of the rash. If it is necessary to continue drug administration, the patient should be watched for other toxic manifestations such as drug fever, jaundice, anemia, or granulocytopenia.

Sulfathiazole administration occasionally is

four hours thereafter \* Patients receiving sulfathiazole tend to have lower blood levels of the drug than those receiving sulfapyridine, although the lower level of the former seems to be equally effective. In general, sulfathiazole tends to become acetylated less than does sulfapyridine. This would appear to be an advantage since the acetylated form of either is therapeutically inactive.

It is important to continue the administration of either drug for thirty-six to forty-eight hours following apparent recovery by crisis or lysis. Premature cessation of drug treatment may be followed by a recrudescence following excretion of the drug through the kidneys. The temptation to interrupt drug therapy as soon as the pulse and temperature approach normal levels must be avoided, as fatalities that might have been prevented occasionally occur under these circumstances. Since prolonged administration of small amounts of these chemotherapeutic agents may allow the infecting microorganism to become drug fast, termination of drug treatment should be abrupt. If a recrudescence of the infection occurs following interruption of therapy, treatment should be resumed with a large dose (4 Gm.)

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seen late in the course of the disease who still are very sick, in patients with type III pneumococcal pneumonia, and in those with extensive pulmonary involvement. Past experience points to the gravity of these conditions. Therefore, until such a time as acceptable evidence may indicate a different course, it would seem desirable in their presence to combine serum and drug treatment. Furthermore, from theoretic considerations, the use of combined drug and specific treatment may shorten the period of drug administration and may decrease the amount of serum necessary to obtain an adequate therapeutic response.

**Contraindications**—Because of the risks of untoward immediate reactions, serum therapy should be used with hesitation in patients with a history of allergy to horse or rabbit proteins, patients who have positive sensitivity tests to the animal serum, patients with congestive cardiac failure, or patients who are moribund.

**Dosage**—Serum therapy is type-specific. It requires careful bacteriologic control. The dose of specific serum must be adequate and will vary with the individual case. In most instances, uncomplicated pneumonia in a person under 25 or 30 years of age, of four days' duration or less, responds with a rapid crisis to the introduction of 50,000 to 100,000 units of serum. In infants and small children, doses of 25,000 to 50,000 units often are adequate. These doses generally are sufficient for most types other than type II, which usually requires 100,000 to 250,000 units for uncomplicated adult cases. The required dosage increases with age, with delay in treatment, when the pulmonary process is extensive, in patients with bacteremia, in patients who are pregnant, or in those in whom there is reason to believe that purulent complications have begun while the pulmonary lesion is still active.

Various methods for the objective evaluation of the adequacy of serum dosage have been devised. The best of these are the Francis (specific pneumococcus carbohydrate) skin test and the slide agglutination test of blood antibody content as advocated by Bullock. While both of these tests have points of real merit, they are sufficiently complicated and their interpretation is sufficiently confused by conditions and exceptions to render them somewhat impracticable for use outside of hospital practice. Clinical judgment and experience must be employed in the successful use of these tests as well as in the control of serum dosage without them, and these attributes of the physician remain the key to successful

treatment. A drop in pulse rate associated with a drop in temperature is the best objective clinical sign of recovery.

The dosage that in total amount may appear to be adequate but the administration of which is spread out over too long a period of time may prove to be inadequate. One hundred thousand units given within a period of four hours to an ordinary case is considerably more effective than the same number of units given in 20,000-unit doses every eight to twelve hours over a period of two to three days. This is especially important in severe cases, since a dose of 200,000 units in a bacteremic patient may bring about an immediate recovery, whereas 400,000 or even 500,000 units spread over a period of two to five days may have little effect.

The occurrence of purulent complications of pneumonia or systemic complications not related to the pneumonia may interfere with successful serum therapy. Careful physical examination usually will reveal them if present.

It has been reported that recovery has followed the administration of repeated small transfusions (300 milliliters) in patients who seemingly failed to respond to large doses of specific serum in the absence of other explanations for serum failure.

**Procedure in Refractory Cases**—In all cases that fail to respond within eighteen to twenty-four hours to apparently adequate doses of antiserum, the following steps should be taken:

- (1) Repeat sputum examination for possible error in typing or for mixed infection. Culture sputum for presence of hemolytic streptococcus and other possible infecting microorganisms.

- (2) Ascertain result of original blood culture and take additional culture.

- (3) Make a search for localized infection or other cause of persistent symptoms.

- (4) Institute drug treatment if that has not already been done.

- (5) Continue serum administration unless changes in therapy are specifically indicated.

**Immediate Serum Reactions**—Immediate reactions to serum are fairly frequent but are usually amenable to control. They may be divided into four groups\*: thermal or chill, anaphylactic, circulatory, and a residual group of heterogeneous character. More than one of these groups of reactions may occur in the same patient.

\* The study upon which this classification of immediate serum reactions is based will be published in the *Archives of Internal Medicine*.

followed by severe conjunctivitis and scleritis which contraindicate further therapy. This toxic complication has not been noted following the administration of sulfapyridine.

Cyanosis has been considerably less frequent following sulfapyridine and sulfathiazole than after sulfanilamide, and its occurrence does not contraindicate further chemotherapy.

There have been occasional reports of apparent hepatic damage associated with sulfapyridine administration. However, interpretation is extremely difficult due to the fact that toxic hepatitis with jaundice may occur in pneumonia in the absence of either drug or serum therapy.

One of the most important complications of therapy with these drugs concerns kidney function. Hematuria has been noted with considerable frequency and often has been associated with symptoms suggesting renal colic. Nitrogen retention and edema, with or without hematuria, and even complete anuria have also been noted, and fatalities due to this complication have occurred. These conditions may appear at any time during the course of the treatment. In most instances when a renal complication is recognized early, discontinuance of the drug and the administration of large quantities of fluid and salt result in prompt improvement.

Determination of the amount of the daily excretion of urine is of great value and can be performed easily. In the home, any convenient household measure may be used. The fluid intake should be sufficient to maintain an output of at least a liter a day. Drug treatment should be stopped if, during drug therapy, a sudden drop in urine volume occurs in a patient who is receiving an adequate fluid intake.

Microscopic hematuria and crystals of the acetylated form of the drug frequently have been found in the urine of patients receiving drug treatment. This finding does not indicate cessation of drug therapy, but is a warning sign. Patients receiving these drugs should have a daily urine examination, and whenever possible a microscopic examination of the sediment should be performed.

Symptoms of nitrogen retention, such as drowsiness or coma, indicate the need for a determination of the nonprotein or blood urea nitrogen and cessation of drug treatment if nitrogen retention is demonstrated. Throughout drug administration the fluid intake must be maintained, by parenteral routes if necessary, in order to avoid renal irritation or obstruction from the concentrated drug.

Patients receiving the sodium salts of these drugs are equally subject to the same toxic manifestations.

It should be re-emphasized that relapses may occur with premature discontinuation of these drugs following evidence of recovery on the part of the patient. Hence, these drugs should be continued until such a time as natural immunity develops. Since this time varies so widely in different patients, no categorical statement can be made as to the optimum time for stopping treatment. On the other hand, the longer treatment is continued, the more opportunities there are for serious toxic effects to occur. Where immunity is given artificially by means of specific antipneumococcus serums, the danger of relapses, at least with the same microorganisms, is probably lessened.

*Meningitis*.—In pneumococcus meningitis, adequate doses of sodium sulfapyridine should be given intravenously to obtain and maintain a blood level of free drug of at least 10 mg per hundred cubic centimeters. Oral administration alone may not be sufficient. Sulfathiazole should not be used in pneumococcus meningitis, since the level of this drug in the spinal fluid at a given level of the free drug in the blood is much lower than that obtainable with sulfapyridine.

### Serum Therapy

*Indications*.—Specific antipneumococcus serums have proved effective in reducing the death rate and bringing about rapid clinical cures in cases of pneumonia due to pneumococci of many types,\* particularly types I, II, V, VII, and VIII in adults and type XIV in infants and children. Some caution should be observed in interpreting the significance in the sputum of types other than these. Pneumococci identified by the direct (Neufeld) method of sputum typing are considerably more likely to be the etiologic agent than are microorganisms that can be found only by indirect methods such as mouse inoculation. However, at least two satisfactory specimens of sputum should be examined before the attempt to obtain a positive result on direct examination is abandoned.

Combined specific serum and chemotherapy may prove lifesaving in patients with bacteremia, in pregnant women, in patients over 50 years of age who are severely ill, in patients

\* At the present time type-specific antipneumococcus serums are supplied by the New York State Department of Health for the treatment of nearly all the recognized types of pneumococcal pneumonia.

profuse cold perspiration, constrictive chest pain, drop in blood pressure, or sudden death. Circulatory reactions occur primarily in older individuals or those with a history of pre-existing cardiovascular disease, may simulate medical shock and occasionally are fatal. They are correlated neither with a positive history of allergy nor positive protein sensitivity tests. Caution should be observed in the administration of serum to persons over 50 years of age or those with pre-existing cardiovascular disease. Epinephrine seems to be of some value in the treatment of circulatory reactions. Further serum therapy is contraindicated, and reliance may then have to be placed upon chemotherapy alone. If, however, it becomes imperative to give the patient more serum, a different lot of antiserum should be used.

There remains a miscellaneous group of reactions including those minor symptoms that at present cannot be assigned on a logical basis to one of the first three groups. These symptoms include pain in the back, lumbar region or extremities, muscular rigidity, nausea, vomiting, abdominal pain, desire to defecate, headache, coma, dizziness, faintness, throbbing of the head, blurred vision, flushing, sensation of heat, profuse perspiration, dyspnea, cyanosis, choking, or change in the rate or rhythm of respirations exclusive of asthmatic breathing. Reactions of this nondescript group are not of serious import in themselves but are very disturbing to the patient. Epinephrine may give relief to some of these symptoms. Usually they are transient in nature and clear spontaneously, but they rarely are prodromes of more serious reactions.

The dilution of serum with salt solution does not decrease the incidence of immediate reactions of any of the above groups. From the practical point of view it is often easier to inject viscous serum if it is diluted with a small amount of sterile physiologic salt solution. However, intravenous injections of very large volumes of salt solution may prove dangerous, especially in patients with cardiovascular disease. When the injection of even a small quantity of intravenous fluid may be dangerous (e.g., acute coronary thrombosis), intra-

muscular injection of concentrated serum may be the method of choice.

**Serum Sickness**—Serum sickness (serum disease) occurs in about one-third of all patients treated with serum. The time of onset is variable, but it usually begins about one week after serum is given. In extreme instances it may occur on the day of treatment or over two weeks after therapy. The disease may consist of fever, urticaria, lymphadenopathy, and arthritis, singly or in combination. All of these are self-limited and usually disappear in from a few days to a week. Neuritis and carditis are rare but are serious when they do occur. Therapy consists of reassurance and analgesics such as acetylsalicylic acid and codeine. For arthritis, oil-of-wintergreen wrappings and a heated cradle over the affected parts may also help. Severe and intractable urticaria may cause the patient extreme discomfort. Treatment of this condition is purely symptomatic and generally not very satisfactory. Epinephrine gives only transient relief and so often seems to be followed by more intense itching that many patients soon refuse it. The patient should remain at complete rest in bed during the course of serum sickness.

With modern refined serums, serum sickness is not only much less frequent than formerly, but the majority of cases are mild and of four days or less in duration.

### Other Methods of Therapy

Hydroxyethylapocuprene administration has been reported to be of value in the treatment of pneumococcal pneumonia. Its superiority over sulfapyridine, sulfathiazole, or specific antiserum, however, has not yet been demonstrated.

Claims have been made for the effectiveness of many other agents in the treatment of pneumonia. These include diathermy, deep x-ray, deuteroproteose, artificial pneumothorax, vaccines, and quinine. No carefully controlled studies of the effectiveness of these agents have as yet been presented. They should not be used in the treatment of pneumococcal pneumonia to the exclusion of agents of established value.

### NECESSARY PRELIMINARY

Admiring Friend: I see that you are now practicing medicine.

Frank Fledgling: No sir, I appear to be practicing medicine, but I am really practicing economy.—*Case and Comment*

### BANISH THE THOUGHT

Customer: "How about it—any vitamins in this food?"

Waitress: "I hardly think so, sir. You see we have a man come every night who sprinkles powder around and kills them"—*The Doctor and Old Quarterly*

The thermal or chill reaction is characterized by chilly sensations or a shaking chill followed by a temperature rise. The term also includes sudden elevations of temperature without recognizable chill occurring during or shortly after serum administration. This reaction apparently is not associated with protein hypersensitivity but is related to certain substances in the serum which are capable of causing reactions in susceptible persons. Cyanosis and dyspnea frequently accompany the chill, and the sharp rise in temperature is transient and usually returns to the previous level within one or two hours after the onset of the reaction. Some patients have recurrent chills following a single dose or each of several doses of serum. Treatment is symptomatic, consisting of external heat and blankets during the chill and cooling drinks and alcohol sponges during the hyperthermic phase. Rarely are heroic measures, such as ice water enemas and an electric fan turned on the patient who is sponged frequently with alcohol and wrapped in a warm wet sheet, necessary to prevent the temperature from reaching dangerous levels. Epinephrine is of no value and may even be contraindicated in the treatment of thermal reactions. It is important not to give another dose of serum following a chill reaction until the temperature has returned approximately to its previous level, because repeated thermal reactions superimposed on a high basic temperature might prove fatal. A chill reaction does not contraindicate further serum therapy, but it is advisable to change to a different lot of serum.

Anaphylactic reactions are characterized by itching, urticaria, asthma, angioneurotic edema or laryngeal edema, occurring singly or in combination. Circulatory changes usually accompany severe reactions of this type.

True fatal anaphylactic shock following serum administration in man is rare when proper precautions have been observed. It has occurred most commonly following the administration of horse or rabbit serum to patients who are known to be sensitive or who give a history suggesting specific sensitivity to horse or rabbit proteins (hair, fur, dander, hide, or serum). Such sensitivity may have been of spontaneous origin or artificially derived as a result of previous and recent serum treatment. The former generally is the more serious and the latter of importance for a variable period of time from five days to six months usually, although induced sensitivity may persist for longer periods.

Probably the most important precautionary

measure is the carefully taken history for specific (horse or rabbit) sensitivity as indicated by asthma, hay fever, urticaria, or edema. A positive history of such manifestations following exposure to horse or rabbit protein contraindicates any attempt to treat and often even to test with the serum in question. A history of previous recent serum treatment indicates extreme caution. A history of sensitivity of specific origin other than the animal in question, such as ragweed hay fever, house dust asthma, or strawberry urticaria, does not constitute an absolute contraindication but does indicate caution in skin testing and treatment.

Skin tests to normal animal serums (such as horse or rabbit) which consist only of erythema probably have little significance, although caution in the early stages of serum administration certainly is advisable in such cases. If, however, the test shows wheal formation with blanching or pseudopodia and erythema, dangerous sensitivity may be present. A positive eye (ophthalmic) test (reddening, itching, and tearing) usually is interpreted as indicating a high degree of sensitivity. In the case of a positive eye or a strongly positive skin test, the patient should be treated with chemotherapeutic agents. If serum treatment also is needed, antiserum obtained from a different animal may be tried. If no serum of different origin is available and serum therapy is imperative, cautious and gradual administration may have to be undertaken. Minute doses of highly diluted serum should be given at first intradermally and then subcutaneously, intramuscularly, and finally intravenously. During this slow method of administration, sometimes referred to as "desensitization," the rate of increase in dosage is judged entirely by the patient's local or general reaction—the latter should not be permitted to occur if possible. Epinephrine (1:1,000)\* should always be kept ready for instant use. Some authorities advise preceding treatment by the subcutaneous injection of 0.25 to 0.5 milliliter of epinephrine (1:1,000) about five to ten minutes before starting the administration of the serum and recommend epinephrine at intervals during treatment.

Sudden circulatory changes may occur in certain patients showing no evidence of the specific symptoms of anaphylaxis. These changes may produce a rapid thready or irregular pulse, asystole, "shock," "vascular collapse" sometimes associated with coma,

\* Active solutions are water-clear—discoloration indicates oxidation and loss of activity.

TABLE 1—RESULT OF TREATMENT WITH OZONIDE OF OLIVE OIL

	Total No	Irrita- tion	Dis- charge	Foul Odor	Pelvic Pain	Elimi- nation	Re- duction
Chronic cervicitis	20	9 10	9	1	1	1	9 10
Recurrent <i>Trichomonas</i> <i>vaginalis</i> vaginitis	18	15	15		1	3	1 12
					1	1	14
Eroded cervix*	18	2	18			1	1 18
Atrophic vaginitis	5	5				2	5
Cervicitis with fibroid uterus	4		4				4
Cervicitis postabortal	2	2					2
Cervicitis with mild prolapse	2	2	2				2
<i>Trichomonas vaginalis</i> vaginitis in pregnancy	3	3					3
Postgonorrhea dis- charge infant	1	1	1			1	

\* Sterility Three one pregnant during treatment

Locke's solution (NaCl 0.6 per cent, KCl 0.01 per cent, NaHCO<sub>3</sub> 0.01 per cent, CaCl<sub>2</sub> 0.01 per cent, and Löffler's blood serum 0.4 per cent) as used by Rakoff [Am J Obst & Gynec 37:265-72 (1939)], both with and without the addition of 10 per cent sterile ascetic fluid, were tried. It was not determined whether the failure to obtain good growth was caused by the mediums used or the isolations. The results of the test were as follows:

Time in Minutes	Motility of <i>Trichomonas Vaginalis</i> Test sample + suspension	Suspension
0	++++	++++
1	++	++++
2	0	++++
15	0	++++

Motility was graded by the limits zero to 4 plus. The above readings are the averages of three tests. A warm stage on the microscope was held at 37 C for all the tests. From the above data it can be seen that the test sample kills *Trichomonas vaginalis* in two minutes.

### Clinical Material

In our series of 150 cases are included the common types of leukorrheas seen in office and clinic practice. In no case has the ozonide failed to give the patient some degree of relief of symptoms, and in many cases the results have been striking.

In our most cooperative group we had 19 cases of chronic cervicitis, 9 of which followed supravaginal hysterectomy. Nine of these complained of irritation as well as discharge. This irritation was eliminated or markedly reduced in all, the discharge being reduced in amount and quality as well.

Of 18 recurrent *Trichomonas* cases, the irritation was entirely eliminated in 3 of long-standing obstinate type, the discharge was reduced in 14, and pelvic pain was relieved in 1.

Of 5 cases of atrophic vaginitis, irritation

was reduced in all and completely eliminated in 2.

Of 18 eroded cervix cases, the discharge was reduced in quantity and quality in all, and 1 who complained of sterility became pregnant while under treatment.

In a group of 8 cases of cervicitis, 3 of which were classed as postabortal, 1 who had a highly odorous discharge was relieved of odor, and discharge was reduced in all.

In 4 cases with fibroid uterus and in 2 associated with mild prolapse, the discharge was reduced, and in 1 of the latter an annoying feeling of weight was relieved (see Table 1).

Several cases are particularly worth noting.

1 Old infantile gonorrhea. Spreads negative for gonococcus for eighteen months, persistent, irritating, odorous discharge. After one week of daily installation of 1 cc of the liquid ozonide of olive oil with a medicine dropper, the discharge and irritation had entirely disappeared.

2 A fastidious patient with recurrent neibothian cysts. The discharge following cauterization of these cysts greatly annoyed her. Treatment after last cauterization with a tampon moistened with this material, followed by daily suppositories, relieved her annoyance.

3 An itching, annoying discharge with a mild recurrent cervicitis apparently dependent upon relaxed, parous vaginal walls in a patient refusing vaginal repair was relieved to such an extent by tamponsade, as above, on two occasions that the patient returns for treatment only at monthly intervals instead of once or twice a week.

4. A patient too much embarrassed by office examination to report for treatment for over a year, a long-standing case of *Trichomonas vaginalis* vaginitis, suddenly decided to get married. She came to the office for a contraceptive diaphragm. Its insertion, though done with the greatest care, caused such extreme discomfort, because of the irritated condition of the vaginal walls and the consequent narrowing of the canal, that intercourse was obviously impossible.

# THE TREATMENT OF LEUKORRHEA WITH OZONIDE OF OLIVE OIL

DAVID NYE BARROWS, M D , F A C S , New York City

OZONIDE of olive oil in olive oil,\* which furnishes a highly available amount of oxygen in chemical combination with a bland oil, has been used by us to treat over 150 unselected cases of leukorrhea. We have found it very effective as a remedy and also have found that it measures up to Savitz, Golerb, and Shelanski's<sup>1</sup> criteria for a vaginal cleanser, i.e., it is nontoxic, nonirritating, and not objectionable because of corrosiveness, toxicity, irritating properties, or general ineffectiveness.

### Literature

We follow Plass<sup>2</sup> (Iowa City) in the belief that the discovery of a single etiologic factor in a case of leukorrhea does not necessarily remove the possibility of other pathogenic agents, but we have tried to classify our cases according to the outstanding factor present. He feels that chronic cervicitis is the most common cause of this complaint, but under this heading he includes erosions, eversion, and cervical polyps.

Moench<sup>3</sup> found only 13 per cent in his series to be positive for *Trichomonas vaginalis*. Our series has shown over 20 per cent vaginal infestation by *Monilia*, especially *albicans*, has not been found causative in our group of patients during this investigation to date.

Reed,<sup>4</sup> quoting from Sutton,<sup>5</sup> emphasizes the probability of deep penetration by vegetable oils into the skin and feels that by its capillary network the cervix and vaginal wall should exceed the skin surface in permeability. This may account for the superior oxygenating action of the ozonide of olive oil as compared to permanganate and perborate douches.

### Bactericidal and Nonirritating Properties of an Ozonide of Olive Oil

We have found this preparation to be neither corrosive, toxic, nor cosmetically unsatisfactory because of the staining of skin or utensils, and it is effective in relieving the

\* The preparation employed is manufactured by the Latimer Laboratory, New York City. It is made to contain approximately 1 per cent available oxygen by weight. It is marketed under the trade name of STA-O-GEN the suppositories are called STA-O-GEN Vag-I-Caps. We are indebted to the manufacturers for the material used in these tests and for incidental laboratory tests.

patient's symptoms. Stevens<sup>6</sup> calls it a "nontoxic, soothing, bland germicide." Patients sensitive to arsenic, picric acid, etc., frequently develop disappointing reactions to these drugs. The ozonide has given no irritation in over 200 cases treated under our immediate supervision. Its use in a suppository has proved valuable and allows for home treatment without the bother of frequent douching.

### Laboratory Tests on *Monilia Albicans* and *Trichomonas Vaginalis*

Laboratory tests of the action of the preparation on *Monilia albicans* and *Trichomonas vaginalis* in vitro have shown the following:

**Killing Time Test\* (*Monilia Albicans*)**—A 5-cc portion of the test sample was placed in a test tube and held in the incubator until the contents were warmed to 37 C, 0.5 cc of a *Monilia albicans* suspension (ninety-six-hour agar slant in saline) was then added to the test sample and thoroughly mixed. The mixture was held at 37 C, and at the designated intervals a loopful was removed and inoculated into sterile tubes of nutrient broth.

#### GROWTH

Exposure in Minutes to Test Sample						
1	2	3	5	10	15	20
+	—	—	—	—	—	—

From the above data it can be seen that the test sample kills *Monilia albicans* in two minutes but not in one minute.

**Killing Time Test\* (*Trichomonas Vaginalis*)**—To determine the killing time of the test sample against *Trichomonas vaginalis*, the following modified spermatocidal test was carried out. Fresh vaginal swabs were taken of women suspected of harboring the flagellates. These swabs were then shaken up with a small quantity (2 cc) of a modified Locke's solution (see below) to obtain a good suspension. A drop of this suspension was then examined microscopically to determine the presence and viability of the organisms. When a suitable suspension was obtained, 1 drop of the suspension was mixed intimately with 1 drop of the test sample, and the time for complete cessation of motility determined. A drop of the suspension above was used as a control.

The above technique was resorted to because of the difficulty experienced in obtaining and culturing the flagellates. Various isolation sources and several types of mediums used failed to yield successful results. Löffler's blood serum slants immersed in Locke's solution and a modified

\* Harvey A. Seil, Ph.D., of Seil, Putt and Rusby, Inc.

proportionate to the quantity and quality of the discharge at the beginning of treatment

The prophylactic use of daily suppositories during and for one week after several subsequent menstrual periods has decreased recurrences in our cases

We feel that much of the relief from the symptoms caused by a thick, often profuse, leukorrhea is dependent upon the decrease of other organisms commonly found in vaginal and cervical secretions. The review of a series of spreads (Gram's stain) taken before treatment and after a week or two of treatment lead Dr Sumner Price to the conclusion that the viscosity of the discharge and the pus cells were reduced in most instances—thinned discharge gave less adherent material on second slide (Fig 1). His chart showed that no particular groups of organisms were proved to be most susceptible to the medication, but no attempt was made to identify the specific organisms

Our usual treatment routine is as follows. The vagina is cleansed gently with a cotton swab. If not completely successful, green soap, caroid powder, etc., are used to remove adherent mucus, particularly from the cervix. Erosions, ectropion, neibothian cysts, etc., are cauterized chemically or with the actual cautery. The vaginal walls and cervix are painted gently with the ozonide.

A soft wool tampon, all or part of it saturated in the preparation, is then inserted deep in the vagina. The patient is instructed to remove this after forty-eight hours or as soon as it causes discomfort. A bland or plain water douche may be taken after removal. One suppository is then to be inserted as deeply as possible on retiring each night, using a small plug of cotton inside the introitus to prevent leakage of the oil. This avoids possible soiling of the bedding or night garments. A douche, as above, may be taken before inserting each new suppository. Often the suppositories can be used every second night to give the oil more time to act on the vaginal areas. If the patient complains that

the suppository is slow to dissolve, we advise her to puncture the suppository with a pin before insertion.

The office treatment is repeated at bi-weekly or weekly intervals as the occasion demands.

In cases where the vaginitis is so severe that tamponade is undesirable, the ozonide is applied gently in the office at daily or less frequent intervals, and the suppositories are employed as early as practicable, and are followed by tamponade later—as soon as it will not cause mechanical irritation.

If chemical cauterization of the cervical or vaginal lesions is indicated, these measures can be carried out before the application of the ozonide, bearing in mind its lack of chemical incompatibilities, since it provides nascent oxygen from a bland vegetable oil vehicle.

## Conclusions

(1) Ozonide of olive oil in olive oil is effective in the treatment of leukorrhea in general. (a) it eliminates unpleasant odor of discharge, (b) it cuts down or eliminates the irritation inside and about the vagina, and (c) it reduces the quantity and density of the discharge, including that following cauterization.

(2) It is nonirritating and nontoxic in contradiction to the arsenic and picrate preparations, equally effective and actually soothing, especially (a) in the infantile vagina, (b) in the senile vagina, and (c) in *Trichomonas vaginalis* vaginitis of pregnancy.

These are the conclusions based on the treatment of over 150 patients.

130 East 56th Street

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2. Plax, E. D. *Minnesota Med.* 22: 610-615 (Sept.) 1939
3. Moench, G. L. *M. Rec.* 150: 83-85 (Aug. 2) 1939
4. Reed, W. A. *Am. J. Obst. and Gynec.* 39: 521-532 (Mar.) 1940
5. Sutton, R. L. *Brit. M. J.* 1: 1223 (1908)
6. Stevens, F. A. *J. Bact.* 32: 47-56 (July) 1936

Lectures in obstetrics for practitioners are being held at The New York Academy of Medicine on Wednesday afternoons at 4:30.

On January 8, 1941, the lecture was on "The Immediate Treatment of Obstetric Hemorrhage," by Dr. Charles A. Gordon, director of obstetrics and gynecology, Long Island College of Medicine.

The lectures will be given as follows: January 15, 1941, "Urinary Tract Complications in Pregnancy, Labor and the Puerperium," by Dr. Arthur J. Murphy, associate attending surgeon

and assistant urologist, Woman's Hospital, January 22, 1941, "Diabetes in Pregnancy," by Dr. Herman Mosenthal, clinical professor of medicine, New York Post-Graduate Medical School, Columbia University, January 29, 1941, "Asphyxia in the Newborn," by Dr. Nicholson J. Eastman, obstetrician-in-chief, The Johns Hopkins Hospital, and February 5, 1941, "Metabolism in Pregnancy, Including Vitamin Deficiency," by Dr. Philip F. Williams, assistant professor of obstetrics, University of Pennsylvania School of Medicine.

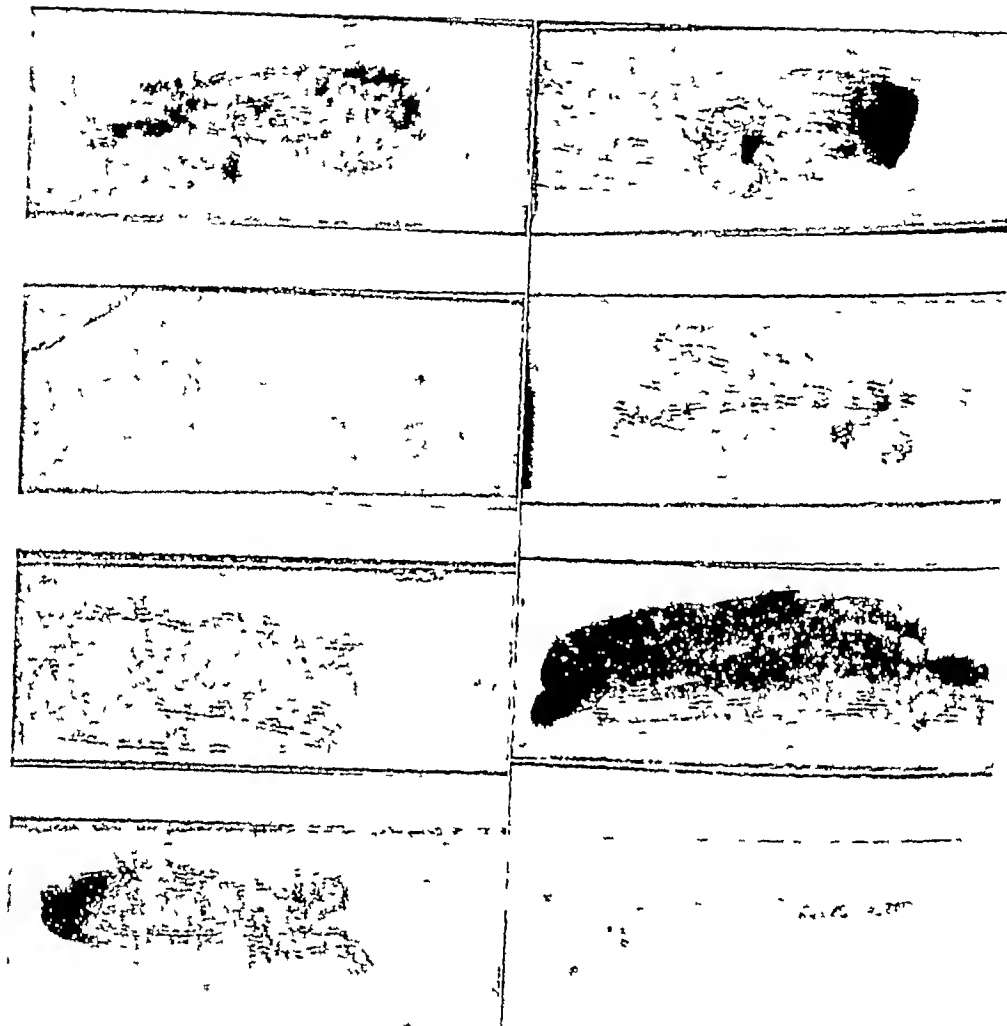


Fig 1 All the slides were prepared by the identical technic. The discharge in the second slide is much less viscous and less adherent to the slide. The top slide, left column, has directly under it the slide taken after treatment, likewise, the third slide was taken before treatment and the fourth, after. The right column follows the same arrangement.

as was tamponade. The walls were painted lightly with the medication, and nightly suppositories were prescribed. One week later the patient reported intercourse without discomfort, and at the end of the second week, the thick, creamy discharge had disappeared and a nearly clear mucus of limited amount was all that remained.

5 A profuse, thick, greenish discharge of a recurrent *Trichomonas* was cleared to the patient's entire satisfaction by nightly suppositories for two weeks, with only two douches during that period and after one office treatment at the start.

6 An unfortunate patient of cleanly habits who, in spite of a daily douche, had such a strong and disagreeable odor from the vulva that pelvic examination was extremely unpleasant both for the doctor and his nurse-assistant standing at the

patient's side. Two tampons three days apart, saturated in the ozonide cleared up the odor so that both doctor and nurse remarked on the change.

7 Three cases of severe *Trichomonas vaginitis* in pregnancy have responded very satisfactorily.

#### Methods and Results of Treatment

The gross change in the character and quantity of a profuse opaque, milky leukorrhea after one or two weeks of treatment to nearly clear mucus has proved to be practically a routine result. The decrease in the amount of vulvar itching, irritation, and soiling of the clothing has been remarked by all of our patients, the degree of relief apparently being

that none of the sputums typed out after therapy.<sup>23</sup>

### Effects on White Blood Count

Great stress has been laid upon the effects of sulfapyridine on the white blood count, so that particular attention was paid to this point. Counts were done on admission and daily during the time that sulfapyridine was administered. Of the children all but 2 revealed a change in leukocyte status. One dropped from 23,700 with 83 per cent polymorphonuclears to 6,600 with 50 per cent polymorphonuclears, whereupon the drug was discontinued. The other showed a rise from 10,000 with 54 per cent polymorphonuclears to 18,550 with 36 per cent polymorphonuclears. It is interesting to note that although the total white count was elevated the number of granulocytes was diminished.

In the adult group all but 6 showed no change in count. Of these, 4 almost doubled their count with the number of granulocytes remaining constant (88 to 91 per cent). Of the remaining 2, 1 dropped from 28,000 with 94 per cent polymorphonuclears to 4,950 with 58 per cent polymorphonuclears but rose again after the drug was discontinued to 6,000 with 76 per cent polymorphonuclears. The other dropped from 20,000 with 95 per cent polymorphonuclears to 1,600 with no polymorphonuclears being found on the smear. This occurred several days after the drug was discontinued. This patient had a streptococcus hemolyticus pneumonia, developed empyema, and was transferred to the surgical service for thoracotomy. He had received 84 Gm of the drug. He was treated for agranulocytosis and responded favorably to the use of pent-nucleotide. Whether this agranulocytic state would have occurred in the absence of sulfapyridine is a moot question in view of the fact that Evans and Gaisford<sup>1</sup> reported just such an occurrence in one of their control cases.

### Effect on Temperature

Although the total duration of temperature from the time of onset of the disease to the time at which it became normal is much shorter than that resulting from treatment with sulfanilamide or other nonspecific drugs, this cannot be judged accurately at this time insofar as treatment was withheld in most cases until a sputum typing could be obtained. However, the efficacy of the drug may be judged by the duration of temperature after the institution of sulfapyridine.

In the children the average duration of tem-

perature after treatment was started was twenty-four and four-tenths hours and ranged from sixteen to fifty-two hours. This is exclusive of 1 case who was extremely toxic, ran a low-grade temperature at all times, and finally expired, another had a postoperative hemothorax whose temperature came down after sixty-eight hours, and 2 cases had fluid on admission and showed no change in their irregular temperature after treatment. Both went on to empyema and were subsequently transferred to the surgical service where closed thoracotomies were done with recovery. *Staphylococcus aureus* was recovered from the first and *Pneumococcus* type III from the second.

In the adult group the average duration of temperature after institution of therapy was nineteen and seven-tenths hours. This is exclusive of 3 cases who had delayed resolution, 2 cases who expired, 1 case complicated by a lacerated bladder, fractured pelvis, and post-operative cystotomy, 1 case of pneumonia that went on to meningitis and expired, and the case of streptococcus pneumonia who developed empyema and agranulocytosis.

### Total Drug Used

As stated earlier in this paper, the dose employed was uniform in all cases in an effort to determine the total dose required and to note the differences obtained, if any, in the concentration of free sulfapyridine in the blood of patients treated with the drug. In the children an average of 6.79 Gm was given. In the adult group an average of 30.1 Gm per case was given. This figure includes those cases complicated by empyema, delayed resolution, meningitis, and reinstitution of therapy following a secondary rise in temperature. If these are excluded, the average total dose per uncomplicated case becomes 20.95 Gm. Both these figures closely approximate the total dose of 25 Gm recommended by the British investigators.

### Blood Concentration

It was surprising indeed to observe the wide variation in blood concentration of free sulfapyridine. It was noted also that the rapidity of fall of temperature and the degree of clinical improvement bore no relation to the concentration of free sulfapyridine in the blood. In the pediatric group the levels varied from 2 to 9.3 mg per hundred cubic centimeters. These ranges are computed from the average levels in each case. Actually, the individual determinations in each case and from case to

# THE TREATMENT OF PNEUMONIA WITH SULFAPYRIDINE

MORRIS FOGEL, M D , Brooklyn

THE medical profession is familiar with the experimental work and recent reports concerning the toxicity of sulfapyridine and its efficacy in the treatment of pneumonia and other coccic infections. Therefore, a review of the literature would be superfluous at this time and we have limited ourselves to a presentation of the results following the use of the drug at the Coney Island Hospital.

## Plan of Study

We present 44 cases of pneumonia treated from January to March, 1939. These were taken from the medical, pediatric, surgical, and urologic services (male and female). They were selected as to day of onset, degree of toxicity, febrile reaction, and type of infecting organism. Sulfapyridine\* was administered to those who were admitted in the third or fourth day of their illness or earlier, with the few exceptions where the febrile reaction was severe and the involvement was massive. Wherever possible, treatment was withheld until the clinical diagnosis was confirmed by x-ray and the sputum had been typed. In the early cases treated, blood levels for free sulfapyridine were not determined, since standards had not as yet been prepared by our laboratory. The later cases, however, had daily determinations by the Marshall method for the determination of sulfanilamide with the substitution of sulfapyridine in the standard. White and differential blood counts were done on admission and daily during the course of therapy. The clinical course of the patients was checked by frequent physical and x-ray examinations. Repeat sputum examinations were done on a number of cases to check up on reports that type specificity of the infecting organism was lost. The dose of the drug used was that suggested by Bullock, which is somewhat higher than that used by the various British investigators.<sup>1</sup> In adults 4 Gm. was given as an initial dose, followed by 1 Gm. every four hours during the day and night. In children it was given on the basis of weight up to 25 pounds, 2 Gm., up to 40 pounds, 3 Gm., and 50 pounds or over, 4 Gm. as an initial dose to be followed by 1 Gm. per 10

pounds body weight divided into six equal doses and given within twenty-four hours. In no case was more than 1 Gm. given every four hours. The drug was continued until the temperature was 100 F. or below for forty-eight hours. It was given crushed and suspended in milk or water and was repeated if vomiting occurred in less than one-half hour. In 1 case because of severe vomiting it was given by rectum suspended in mineral oil.

## Age Groups and Involvement

Of the 44 cases of lobar pneumonia treated, 20 were children whose ages ranged from 3½ months to 8 years. There were 11 boys and 9 girls, with an average age of 2.97 and 2.03 years, respectively. The average number of lobes involved was 1.35 with 1 to 2 lobes per case. Two cases had fluid on admission.

In the adult group there were 18 men and 16 women whose ages ranged from 13 to 65 years with an average of 33 and 40.5 years, respectively. The average number of lobes involved was 1.77 with 1 to 4 lobes per case.

## Sputum Types

The types encountered in the children were as follows: I, 3; III, 3; VI, 2; VII, 2; VIII, 1; XIV, 2; XXIII, 1; and 6 did not type out.

Repeat sputum examinations and gastric extractions were not done, but *Pneumococcus* type III were recovered from the chest contents of one of the cases that had had fluid on admission and went on to empyema.

In the adult group the following types were obtained: I, 4; III, 12; VII, 2; XIV, 1; XVI, 1; XVIII, 1; mixed, 2 (IV, V, and VI) (VII and VIII), and *Streptococcus hemolyticus*, 1.

Repeat sputum typings were obtained in 3 cases of type III pneumonia and in 1 case of mixed infection. One of the type III cases developed a type III pneumococcal meningitis after he had been on sulfapyridine for eighteen days. Type III organisms were cultured repeatedly from a case of pneumococcal meningitis secondary to an acute mastoid infection. In the other cases, although pneumococci were seen, they did not type out after sulfapyridine had been given. The finding of even a few cases in which sputum typings were obtained after the drug was given is in contrast to the work of the British investigators who found

Resident in medicine, associated with Dr. Philip I. Nash, director of medicine, Coney Island Hospital.

\* The sulfapyridine used in this work was supplied through the courtesy of Merck & Company under the trade name of "Dagenaan."

The group included 20 children and 24 adults

In a number of cases the sputum could be retyped after treatment

The types treated were I, III, VI, VIII, XIV, XVI, XVIII, XXIII, mixed (IV, V, and VI) (VII and VIII), a group that did not type out, and 1 case of streptococcus hemolyticus pneumonia

The majority of cases showed no change in the total white count. Elevation as well as fall in counts were noted

The average duration of temperature after treatment was started was twenty-five and four-tenths hours in the children and nineteen and seven-tenths hours in the adults

The average total dose of the drug given in uncomplicated cases was 20.95 Gm., 30.1 Gm., if the case was complicated, were included

Blood concentrations varied widely and bore no relation to the rate of recovery

Complications noted were delayed resolu-

tion, spread of infection, secondary rises in temperature, empyema, and meningitis

There were 4 deaths, 1 in the pediatric group and 3 in the adult group

The toxic reactions encountered were nausea, vomiting, weakness, mental confusion, hematuria, and skin manifestations

Four cases of pneumococcal meningitis were treated with 1 recovery. The results in our cases of pneumococcal meningitis do not seem to compare favorably with those obtained in England.<sup>4,5</sup>

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- 2 Telling M. and Oliver, W. A. *Lancet* 1 1391-1393 (June 18) 1933
- 3 Levaditi and Varman. *Lancet* 2 1402 (June 18) 1933
- 4 Reid, G. C. K. *Lancet* 2 619-620 (Sept. 10) 1933
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## NEW YORK STATE CHAPTER OF THE AMERICAN COLLEGE OF CHEST PHYSICIANS MEETS JANUARY 17 IN NEW YORK CITY

The meeting will be held at the Hotel Biltmore, and the program is printed below

Dr. Edgar Mayer, of New York City, is chairman of the Morning Session.

9 15—Registration of members and guests

9 30—"Bronchoscopy in Diseases of the Chest"  
Dr. Chevalier L. Jackson, professor of broncho-esophagology, Temple University Medical School, Philadelphia

10 15—"Surgery of Carcinoma of the Lung"  
Dr. W. Emory Burnett, professor of clinical surgery, Temple University Medical School, Philadelphia, associate surgeon and thoracic consultant, Philadelphia General Hospital.

Clinical Discussion of Carcinoma of the Lung by

Dr. George G. Ornstein, associate professor of clinical medicine, New York Post-Graduate Medical School and Hospital, New York City, director of medicine, Seaview Hospital, and director of tuberculosis, Metropolitan Hospital, New York City

Surgical Discussion of Carcinoma of the Lung by

Dr. Samuel Alcott Thompson, associate professor of surgery, New York Medical College and director, Department of Thoracic Surgery, Metropolitan Hospital, New York City

Pathologic Discussion of Carcinoma of the Lung by

Dr. Frank W. Konzelmann, professor of clinical pathology, Temple University School of Medicine, Philadelphia

11 45—"Industrial Pulmonary Diseases"

Dr. Leonard Greenburg, executive director, Division of Industrial Hygiene, Department of Labor, State of New York.

12 30—Lunch  
Nelson W. Strohm, Buffalo, is chairman of the Afternoon Session.

2 00—"Tuberculosis in the Army Under the Present Epidemiologic Conditions"

Dr. Edgar Mayer, assistant professor of clinical medicine, Cornell Medical School, New York City

Discussion by Dr. Israel Rappaport, New York City

2 45—"Postoperative Atelectasis—Diagnosis—Prevention and Treatment"

Dr. Arthur Q. Penta, lecturer on the mycotic and fusospirochetal infections of the lungs, Temple University Medical School, Philadelphia, director, Department of Bronchoscopy, Schenectady City Hospital, Schenectady

3 15—"Artificial Pneumothorax in the Treatment of Pulmonary Tuberculosis" (Sound Motion Picture)

Dr. James S. Edlin, adjunct clinical professor of medicine, Polyclinic Medical School, director, Department of Thoracic Diseases, Polyclinic Hospital, New York City

Collaborators: Dr. Sydney Bassin, assistant attending, Municipal Sanatorium, Otisville, New York, and Dr. Walter Lichtenberg, assistant attending, City Hospital, New York City

4 15—Business Meeting

The officers of the New York State Chapter of American College of Chest Physicians follows

President: Dr. Edgar Mayer

Vice-President: Dr. Nelson W. Strohm

Secretary: Dr. Arthur Q. Penta

Governor of the College for the State of New York: Dr. George Ornstein

Regent of the College for the State of New York: Dr. Edward P. Eglee

case varied from 0.5 to 11 mg per hundred cubic centimeters. It was found that the blood was cleared of the drug forty-eight hours after it was discontinued.

Spinal fluid determinations were done in 2 cases. The average concentration was found to be 41 per cent of the blood level in 1 and 76 per cent in the other.

### Complications

In the pediatric group 2 were admitted with evidence of fluid, did not respond to treatment, and went on to empyema, another had a sharp drop in white blood count and a secondary rise in temperature after the drug was discontinued. The temperature dropped to normal in four hours spontaneously.

In the adult group 1 developed empyema and agranulocytosis, 1 developed pneumococcal meningitis, 3 had delayed resolution, and 3 had secondary rises in temperature.

Of those adults who had secondary rises in temperature, 1 had had a normal temperature for only twenty-four hours when the medication was stopped. Twenty-four hours later his temperature rose to its original height of 105 F, and it was found that the area of consolidation had increased in size. The concentration of sulfapyridine in his blood was zero at this time. His response to a second course of treatment was as rapid as originally (sixteen hours), and he made an uneventful recovery. Another developed a small amount of interlobar fluid which absorbed spontaneously. The third had a rise in temperature with neither spread nor fluid. She responded to further administration of the drug.

### Deaths

There was 1 death in the pediatric group. This was an infant, aged 2 months, who was cachectic on admission and ran a continuous low-grade temperature ranging from 99 to 101 F and up to 102 F on four occasions. A typing could not be obtained, although sputum, throat smear, and gastric contents were examined.

In the adult group there were 3 deaths. All were type III pneumonias. Of these, 1 had been chronically ill for the past nine years and was admitted to the surgical service with an acute abdomen. He was also suffering from arteriosclerotic heart disease and avitaminosis B. His blood culture was positive for type III pneumococci. He expired twenty-four hours after treatment had been started. The third died of type III pneumococcal meningitis, his pneumonia had cleared as shown by x-ray.

Acute pneumococcal meningitis had developed during the treatment of the pneumonia with sulfapyridine.

### Toxic Reactions

In most cases there was nausea. Six of the pediatric cases had frank vomiting and 1 had a transient hematuria. In the adult group only 5 had no reaction following the use of the drug. The remainder had gastric upsets varying from mild nausea to such extreme vomiting that the drug was given in 1 case per rectum suspended in mineral oil. Cyanosis, weakness, and mental confusion were seen in several cases. One had frank hematuria. Four cases, 3 of which survived, became completely irrational for several days. Two cases of skin rashes developed. 1 had a form of diffuse erythema, pruritic in nature and resembling giant wheals and the other had a morbilliform rash. The latter cleared as soon as the drug was discontinued.

### Other Cases

In addition to the 1 case of type III pneumococcal meningitis complicating pneumonia, 2 other cases of pneumococcal meningitis were treated. The first was a boy, aged 5, admitted with the diagnosis of meningitis and in whose spinal fluid type XIX organisms were found. He expired twelve hours after institution of therapy. Since he was seen late in his illness and had had only 6.5 Gm. of the drug, it was felt that the treatment could not be evaluated. The second was a white man, aged 30, who developed type III pneumococcal meningitis three weeks following an episode of acute mastoiditis from which type III organisms were recovered at operation. Type III organisms were cultured repeatedly from his spinal fluid. He received a total of 133 Gm. of sulfapyridine and developed the diffuse rash mentioned above. He expired twenty-five days after the onset of meningitis.

One case of pneumococcal meningitis following concussion of the brain was treated successfully with sulfapyridine. Organisms were seen but did not type out.

One case of subacute bacterial endocarditis was treated with no improvement. A case of staphylococcal septicemia was also treated. Repeated blood cultures have been sterile since treatment was started, although his condition is still poor.

### Summary

Forty-three cases of pneumococcal and 1 case of streptococcal pneumonia were treated

18.66 Gm. of anhydrous dextrose, 4.18 Gm. of sodium chloride, and 5.76 Gm. of dihydrous sodium citrate per liter of solution. Five of these were iced at the time of collection and nine were at room temperature. There was no apparent difference between these two groups during the experiment, and, therefore, they will be considered as one. Further work has reaffirmed the fact that it is not necessary to refrigerate our solution before use and has shown that it will preserve adult blood up to three weeks without a significant degree of hemolysis.

This group of twenty-five bloods was observed over a period of sixteen days. Eight of them were removed at intervals for attempts at plasma aspiration during this time. Consequently, at the end of the experiment there were remaining ten flasks containing our solution and seven containing DeGowin's. No appreciable hemolysis occurred in any of these bloods. The cell volume was read each day, and the clarity of the supernatant plasma was noted. All of the cell and plasma volumes in the following discussion are based on a total volume of 1,000 cc. The average red cell volume and the degree of clearing of the supernatant plasma in the two solutions during the period of storage are shown in Table 1. The plasma in the flasks containing our solution always had a larger volume and showed more complete clearing at all times during the sixteen days.

The supernatant plasma dilution was aspirated from the 1,000-cc flasks into empty 500-cc transfusovacs by means of a donor valve set that had been altered by replacing the 15-gage venipuncture needle with a square, pointed, 6-inch, 15-gage needle. The rubber stopper in the transfusovac flasks has recently been changed so that there is a thin layer of rubber, continuous with the stopper, closing both the air vent and fluid outlet holes. This new closure is advantageous, for it maintains the vacuum in the flask and the sterility of its contents even though the inner rubber dam has been removed or damaged. In addition, it permits the flask to be filled to the top, if desired, without danger of breaking the sterile seal. Because the rubber closing the fluid outlet hole is heavy enough to make a reasonably tight fit around the aspirating needle, all the air that enters the flask as the plasma is withdrawn must come through the air filter which is placed through the rubber stopper. This enables us to maintain a completely closed system from the time of collection of blood

TABLE 1—THE VOLUME OF THE SETTLED RED CELLS AND THE DEGREE OF CLEARING OF THE PLASMA DURING STORAGE

DAYS of Storage	6	10	12	16
DG	463 cc +	414 cc. +	391 cc ++	384 cc +++
JA	388 cc +	356 cc ++	348 cc +++	338 cc ++++

DG blood collected in DeGowin's solution.  
 JA blood collected in our solution.  
 + slight clearing of the supernatant plasma.  
 +++ almost complete clearing of the supernatant plasma.

through to the finished flask of plasma. We have found that it makes no difference in the speed of red cell sedimentation or clearing of the plasma whether or not the vacuum remaining in the flask after the collection of blood is released before storage. Therefore, as is to be preferred, the collections of blood are stored under a vacuum.

In an effort to determine how quickly satisfactory plasma could be obtained, both with regard to clarity and volume, we aspirated one flask of each type at the end of two, four, six, and ten days. None of these had a satisfactory volume, and there were both red cells and large amounts of fibrin present up to six days of storage and considerable fibrin still in the plasma at ten days. Within two weeks after aspiration the fibrin and cells formed a rather heavy precipitate in these plasmas. At twelve days the plasma was reasonably satisfactory, but, because of the greater volume and the appreciably increased clarity of the plasma layer, we feel that fourteen to sixteen days of storage are necessary, preferably sixteen. Continued observation up to twenty-two days has shown but little change in the plasma layer. We attempted to clear turbid plasma solution at the time of aspiration by filtration through the regular filter drip screen (200 mesh to the inch), through a special 300-mesh screen, and through a 3- by 1-inch column of packed wet cotton. None of these seemed to make any difference in the clarity of the product, whether the cloudiness was due to incomplete clearing during early storage or to hypemia, which is encountered occasionally in blood from donors allegedly fasting for three or four hours.

There was a distinct difference in the plasma solution prepared from the two preservatives. First, while both usually became crystal clear, that made from collections in DeGowin's preservative solution was not as satisfactory because it almost always had, within three weeks after aspiration, a moderate amount of precipitate, presumably fibrin,<sup>2</sup> which was of a

# A NEW METHOD FOR THE PREPARATION OF DILUTE BLOOD PLASMA AND THE OPERATION OF A COMPLETE TRANSFUSION SERVICE

JOHN B. ALSEVER, M D, and ROBERT B. AINSLIE, M D, Syracuse, New York

IN VIEW of the increasing interest in the preparation and therapeutic use of blood plasma and in the preservation of whole blood for transfusions, it seems desirable to present a new method for plasma preparation that involves changes and simplifications in blood bank technic.

During our experiences with the preservation and uses of placental blood,<sup>1</sup> it occurred to us that it might be possible to obtain satisfactory plasma by simply aspirating the clear supernatant layer from the diluted placental blood after a short period of storage. It was found that two weeks was sufficient time for complete settling of the red cells and clearing of the supernatant plasma and that in that length of time no appreciable amount of hemolysis occurred. The use of placental blood is not very practical because of the small amount of blood (average 85 cc) to be obtained by any one collection, therefore we decided to apply this method to adult blood. We believed it would considerably simplify the technic for obtaining dilute, preserved plasma and would make possible a simpler and better system of blood banking. With such a method for taking plasma in good condition from relatively old blood, that most recently collected could always be used for the whole blood transfusions.

In order to make such a method practical it was desirable to devise a technic whereby the whole procedure could be carried out in a closed system, thereby reducing to a minimum the danger of contamination which is present to some degree in all other methods in current use. It was considered that the Baxter transfusovac equipment, with certain slight modifications, would make this possible. A preservative would have to be used which would provide the most effective preservation of the blood during the necessary period of storage and in which there would be a rapid sedimentation of the red cells and sufficient clearing of the supernatant plasma. Otherwise centrifugation would be necessary to

obtain an adequate amount of clear plasma, as is true of simple citrated blood. There were two solutions which, it seemed, might meet these requirements. One was DeGowin's solution,<sup>2</sup> which undoubtedly is the best blood preservative yet devised, but it has the disadvantage of having to be ice cold at the time of the collection of blood to prevent rather frequent loss due to immediate hemolysis. The other was the solution that we had developed for placental blood. This contained enough dextrose to prevent appreciable hemolysis for three weeks and could be used at room temperature for the collection of this blood. We expected, because of the greater specific gravity of DeGowin's solution, that the sedimentation of the red cells and clearing of the plasma would occur more slowly than in our solution but would permit a longer period of storage. We were not certain of the value of our solution for adult blood or of the time necessary to obtain a clear plasma. Therefore, both solutions were used in the preliminary work.

Twenty-five volunteer donors\* were enrolled, and blood was collected after twelve to eighteen hours of fasting. Using the standard Baxter donor valve sets, we drew 500 cc of blood from each donor into 1,000-cc transfusovacs containing 500 cc of preservative†. Eleven of these contained a modification of DeGowin's solution and were cooled to 35 F at the time of collection. We reduced the total volume of preservative recommended for each pint of blood from 750 to 500 cc but maintained the same general proportions, using 40.3 Gm of anhydrous dextrose and 5.76 Gm of dihydric sodium citrate per liter of solution. This meant that we could not expect to keep the blood quite so long as is possible using the larger amount of preservative, for volume seems to be a factor.<sup>2</sup> However, the specific gravity of the mixture of blood and solution was not altered significantly, and, therefore, the rate of red cell sedimentation and clearing of the plasma was not affected. Fourteen of the flasks contained our preservative 500 cc in volume, made up of

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From the Transfusion Service, Department of Clinical Pathology, Syracuse University College of Medicine. Supported by a grant from the Hendrick Research Fund.

\* From the American Legion members of Syracuse.

† Material supplied by the Baxter Laboratories, Glenview, Illinois.

preservation of the blood or on the quality or the yield of plasma

The recommended technic for plasma production by this method is as follows. A suitable donor is selected by means of a careful history and physical examination. We prefer to use male donors, and they shall have been fasting for at least four hours at the time of collection. The best vein is selected and the arm prepared in the usual manner, using iodine and 70 per cent alcohol. The vein site is anesthetized with 1 per cent procaine solution, and a sphygmomanometer cuff is applied to the arm and inflated to about 50 mm of mercury pressure. A sterile donor valve set is prepared for use, the 1,000-cc transfusovac containing 500 cc of preservative (Fig 1) is agitated thoroughly to wet completely the inner surface, and the metal cap and outer rubber dam are removed. The closed valve is then inserted through the cross mark on the rubber stopper, the point of the needle is placed through the skin, and the valve is opened and closed quickly to produce a slight vacuum in the rubber tubing. (The needle should be held in position during this maneuver to prevent rotation of the bevel for this might interfere with the venipuncture.) Then the needle is introduced into the vein, and blood flows into the tubing at once because of the partial vacuum present. This makes venipuncture simpler and quicker. As soon as blood is in the tubing, the valve is again opened and the flow of blood regulated. During the collection the flask must be constantly agitated to insure proper mixing of blood and preservative. This prevents clotting due to the presence of unmixed blood. When 500 cc has been obtained, the valve is closed and the pressure in the sphygmomanometer cuff released. The needle is now withdrawn from the vein and placed in a clean dry test tube. The valve is removed from the stopper, and the blood that remains in the tubing (about 7 cc) is drained into the test tube. This sample is used for the serologic tests and for blood grouping and cross matching if the collection is to be stored for potential use as whole blood. The flask is now recapped by first replacing the outer rubber dam and then the metal disk and ring. The latter is held in place by adhesive tape. This protects the stopper and keeps it clean. The diluted blood is now gently but thoroughly mixed again, labeled, and placed at once in the refrigerator at 35 F. It remains there in storage for two weeks. During this time the serologic tests will have been done. Be-

tween the fourteenth and sixteenth day, usually the latter, the flask is removed from storage for aspiration of the plasma layer. The cap is removed, the inner rubber dam taken off, and the stopper wiped with 70 per cent alcohol. The vacuum is released by placing an air filter through the fluid outlet hole (Fig 2). This location is used to split the rubber so that the blunt aspirating needle can easily be inserted. The air tube hole is not disturbed, for the passage of any air through it would at once stir up the settled red cells. The air filter is withdrawn from the fluid outlet hole and reinserted through the cross mark on the stopper so that air may enter as the plasma is aspirated. An 18-gage instead of the customary 20-gage needle is used on the air filter because it is strong enough to puncture the rubber stopper easily. A donor valve set with the flat pointed, 6-inch needle is opened, and the long needle is placed through the pierced closure of the fluid outlet hole so that the point is about 1 inch below the surface of the plasma. The closed valve is inserted in an empty 500-cc transfusovac, and the aspiration is begun (Fig 3). At first it can be carried out quite rapidly, but, when the fluid level gets to within an inch of the red cell layer, the speed should be slowed to avoid stirring up the settled fibrin and red cells. The end of the needle must always be kept below the surface of the plasma, for, if much air is allowed to replace the vacuum in the 500-cc flask, the aspiration cannot be completed. A small amount of loosely settled fibrin that lies over the red cell layer (Fig 2) is unavoidably included in the aspirated plasma if maximum yield is desired, for with reasonable care the plasma can be drawn off until only about 75 cc remains over the red cells (Fig 4). The valve is closed as soon as the desired amount of plasma has been obtained, and the aspirating set is removed. If there is question as to the sterility of the collection, the fluid remaining in the aspirating set can be used for cultures.

It is emphasized that adequate refrigeration is essential. The temperature should be 35 F and should not vary more than 2 or 3 degrees. The refrigerator should be roomy and uncrowded and should have a fan to provide circulation of the air and maintain a constant temperature throughout the box. The cooling unit should have a greater capacity than is standard for a domestic refrigerator of the same size because the maintenance of 35 F temperature requires more refrigeration. The unit should be used solely

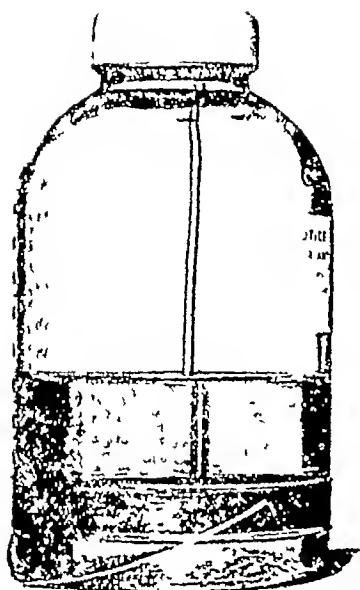


FIG 1

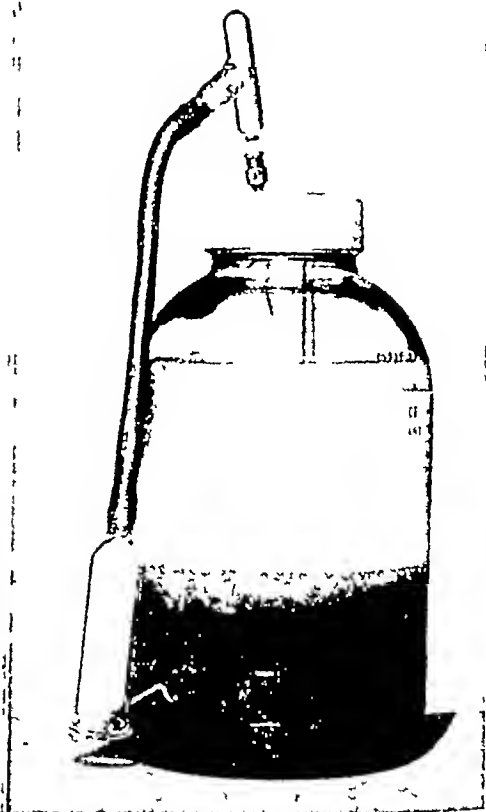


FIG 2

FIG 1 The 1,000-cc transfusovac containing 500 cc of preservative

FIG 2 Appearance of diluted blood after fourteen to sixteen days storage. Note the clarity of the supernatant plasma layer. The density of the fibrin layer above the red cells is accentuated photographically by posterior illumination.

fairly coarse nature and would not resuspend well. That made from our solution almost always had only a small amount of finely divided precipitate that easily and completely resuspended in the plasma, making it appear as it had on the day of aspiration, and it was too fine to be taken out by the filter drip screen. Second, the yield was consistently larger with our solution. The average for the group from DeGowin's solution was 554 cc and was 615 cc from ours. We compared these amounts with that recoverable by centrifugation of the blood in both solutions. It was found that we were obtaining 86 per cent of the total possible yield from our solution and 81 per cent from DeGowin's. That this 86 per cent yield in our solution is satisfactory is substantiated by the total protein values of the diluted plasma. Duplicate determinations on six flasks by the macrokjeldahl method showed a variation of 2.6 to 2.9 Gm with an average

of 2.8 Gm of protein per hundred cubic centimeters. This means that we are obtaining about 17 Gm of protein in the dilute plasma, and the total present in the serum from an equal amount of blood is only about 20 Gm (using 7 Gm of protein per hundred cubic centimeters and a 43 per cent hematocrit as normal).

Because of the rare appearance of a few small soft clots in the earlier collections, we increased the percentage of citrate in the ultimate mixture of blood and preservative from 0.25 to about 0.4 per cent, and the preservative solution formula is now 18.66 Gm of anhydrous dextrose, 4.18 Gm of sodium chloride, and 8.0 Gm of dihydric sodium citrate per liter, making a slightly hypertonic solution. Since this was done, we have had little trouble with filters becoming clogged by the presence of small clots in the stored blood. This change has had no deleterious effect on the

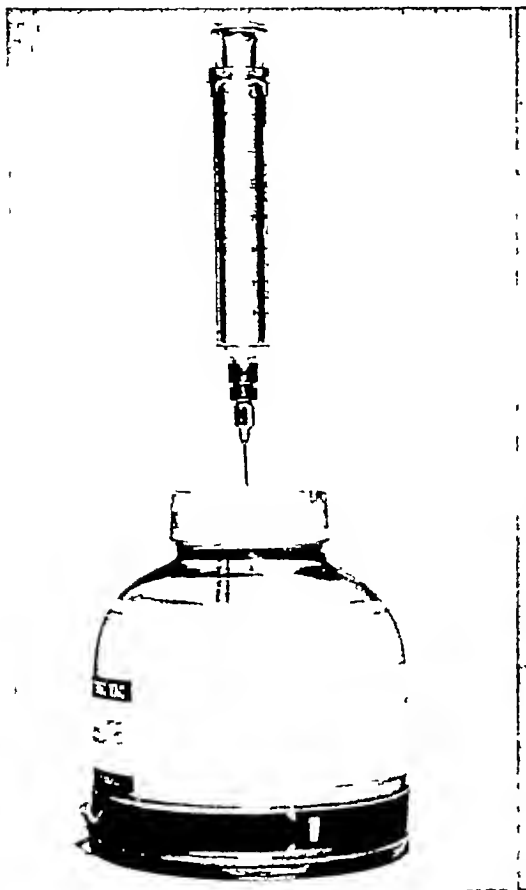


FIG 5

FIG 5 The addition of merthiolate



FIG 6

FIG 6 The photographic appearance of the dilute plasma now crystal clear after the small amount of fibrin present at aspiration has settled out

but from our experience with preserved placental blood<sup>1</sup> and from work done by DeGowin<sup>2</sup> we feel that this is not a detrimental factor in the use of preserved blood or the plasma made from it. It has also been demonstrated that there are no reactions peculiar to the use of stored blood.<sup>3</sup>

Although the small amount of fine precipitate present in this plasma is not therapeutically harmful, it may be the opinion of some that it should be removed. This can readily be accomplished, but it adds to the technical procedures and lengthens the period of preparation to about four weeks. To do this, the plasma from three or four flasks is aspirated into one empty 2,000-cc transfusor by a technic similar to that described for multiple collections. Merthiolate is added, and the flask of pooled plasma is allowed to

stand at room temperature, whereby clearing occurs more rapidly. This usually takes about two weeks. Then the cleared plasma is reaspirated into the empty 500-cc flasks, leaving all of the precipitate and a small amount of plasma in the 2,000-cc flask. This does produce a more uniform product, there is no precipitate, the agglutinins are, of course, also pooled and their titers in constituent plasmas still further reduced. We have found that pooling will produce a maximum clearing of lipemic plasma.

In July, 1940, a transfusion service was organized for the Syracuse University Medical Center hospitals, and it has been using the new method for plasma production. There are four adjacent hospitals, two general hospitals of 250 beds each and one contagious and one psychopathic unit of about sixty



FIG 3

FIG 3 The beginning of aspiration of the dilute plasma



FIG 4

FIG 4 The completion of aspiration of the dilute plasma

for the storage of blood. A constant temperature cannot be maintained when the door is opened frequently.

It is possible to draw plasma from more than one flask with the same aspirating set without danger of contamination. At the end of the first collection the valve is closed and the end of the aspirating needle pulled up slightly to avoid contact with the red cells. The second flask of blood is prepared as described, using the air filter taken from the first one. The aspirating needle is removed from the first and at once placed into the second. An empty 500-cc flask is opened and the valve transferred from the one just filled. The collection of plasma now proceeds as before. With this method there has been minimum handling of the aspirating set, the needles have touched only the sterile stoppers of the flasks, and their exposure to room air has been only momentary. We have found this procedure satisfactory, and it saves time in making multiple collections and in maintaining the equipment.

The 500-cc empty transfusovacs with the new type stopper will hold the entire yield of plasma from one flask of blood. The possibility of contamination is practically nil if reasonable care is used, because this system is completely closed and only filtered air is

allowed to enter it. However, we are adding merthiolate to a concentration of 1 to 10,000 as is customary with other methods for plasma production.<sup>3</sup> This is done by allowing the remaining vacuum to pull the proper amount of a 1 to 100 solution of merthiolate into the plasma from a sterile glycerinated syringe inserted through the cross mark on the stopper (Fig 5). It is likely that this step is not necessary, but, when the plasma is to be stored at room temperature or for long periods, it gives the maximum protection from bacterial growth.<sup>3</sup> Now the flask of diluted plasma is closed by the method described for the 1,000-cc flasks of blood, is labeled with the identifying number of the whole blood, and is dated. It is now ready for immediate use or for storage. The maximum safe period of storage seems to be indefinite and is at least two years.<sup>3</sup>

Except for the presence of lipemia, plasma prepared by this method is quite clear at the time of aspiration and becomes crystal clear after about two weeks (Fig 6), with only the small amount of precipitate described. Its other physical characteristics have been stated, and it is similar to plasma prepared by the method of Elliott.<sup>4</sup> That there is an increase in the potassium content of the plasma during storage of whole blood is well known,

TABLE 3—DONOR CARD

University Medical Center Transfusion Service		Blood Donation No		Age	Service
Donor's Name				Sex	Ward
Address				Color	Hospital Priv
In Interest of				At	
Physical Examination of Donor History		Physical Findings			
A physical examination of this donor shows no contraindication to the donation of the quantity of blood described herein.					
Date		Signed			M D
-----					
Amount Donated		Date			
Date		Blood Wassermann			
Type	(Landsteiner)	Blood Flocculation			
Date Typed		Date Examined			
Signed		By			
I, the donor described herein voluntarily donate my blood to the Transfusion Service to be used as decided by the said service.					
Date		Signed			
-----					
Recipient		Hospital		Service	

plasma supply. It means that all routine needs should be anticipated two or three days. Whole blood transfusions are routinely preceded by the infusion of about 200 cc of sixth molar sodium lactate, and about 100 cc more is used to flush the last of the blood through the recipient set. This guards against kidney damage by free hemoglobin released by an unforeseen or accidental hemolytic reaction because it produces an alkaline urine.<sup>17</sup>

We find that, as a rule, friends or relatives of the patients appear in sufficient numbers to supply more than enough blood to replace the amount used. There are, of course, a few patients who can neither supply a voluntary donor nor afford a professional one. These we care for, if need be, through a number of volunteer donors whom we have listed according to their blood groups. We also have a list of professional donors who are readily available for those who desire them.

Blood is drawn in the manner described previously for plasma preparation. All routine collections are made in the 1,000-cc flasks containing the preservative. To supply requests for fresh blood, we use the regular 500-cc transfusovac or the 250-cc centrivac, depending on the amount wanted. Fresh plasma is prepared by centrifugating freshly collected blood for one hour at 2,000 revolutions per minute. It is then allowed to stand in the refrigerator long enough so that the swirl of cells, which sometimes occurs when the centrifuge stops, will have settled out. The clear supernatant plasma is then aspirated into the 500-cc plasmavac which contains 250 cc of isotonic saline as the diluent. Un-

diluted plasma is made in the same way, except that it is aspirated into an empty flask. We prefer to collect blood for these two purposes in the centrivacs because they can be placed directly into the centrifuge and the plasma can be aspirated by the same closed technic described for the 1,000-cc flasks. Elliott's original method<sup>4</sup> can be used if centrivacs are not available, but it is neither as easy nor as safe from contamination as the centrivac method. All fresh blood and plasma are used as soon after preparation as is possible and are stored at 35 F during the interval. We feel that twenty-four hours must elapse before such preparations are to be considered no longer fresh.

Donors are questioned as to their fasting state, and all the necessary information is obtained and recorded on the donor card (shown in Table 3). They are required to sign the statement on the reverse side of the card (lower half of Table 3). This avoids any possible difficulty in the future use of the blood. The test tube containing the 7 cc of blood, collected as described earlier, is centrifuged, and enough serum is pipetted off to do an emergency flocculation test and to fill two capillary pipets for use in subsequent cross matching. Red cells are taken from the clot, the donor's blood group is determined, and a fairly heavy suspension of cells is made in a small, properly labeled test tube containing about 1 cc of the preservative. The capillary pipets of serum are placed in this tube which is then attached to the flask of blood by a rubber collar (Fig 7). In this manner the cells and serum from each blood are kept constantly with the proper flask and

TABLE 2—REQUISITION CARD

University Medical Center Transfusion Service Requisition For Blood					
To be Filled in by Physician					
Recipient's Name	Date	Ward	Time	A.M. P.M.	
Diagnosis		Age			
Reason for Request		Sex			
Latest Blood Study		Hospital			
Amount of Blood Required	Signed	cc	Time Wanted	M.D.	
Kind Needed				Resident or Attending Physician	
<p>Note This card completely filled out on this side to be sent to blood laboratory accompanied by 5 to 10 cc of recipient's whole blood. Arrangement must be made for prospective donors to come to the blood laboratory between 4 to 6 P.M., fasting.</p>					
				Approved	
				M.D.	
				Transfusion Service	
To be Filled in by Laboratory					
Recipient's Blood Type					Landsteiner
Date examined	by	blood			
Cross matching with No	by				
Date					
Donor's Type					
Requisition filled	Time	A.M.	P.M.		
Date					
Amount of blood supplied		cc.	Reaction		
Transfusion given by whom					
Notes					

beds each. The transfusion laboratory is located in one of the general hospitals, has its own staff, and operates on a twenty-four-hour basis. All of the blood is collected and stored in the laboratory, and blood or plasma is transported to the other hospitals of the group in canvas carrying bags. The service is prepared to furnish fresh blood, preserved blood, fresh plasma (either diluted or undiluted), and dilute preserved plasma. The indications for the use of fresh blood or fresh plasma are the blood dyscrasias and infections. Undiluted plasma is used in the treatment of edema in the presence of a low blood protein level. Preserved blood and diluted preserved plasma<sup>1</sup> are satisfactory for most other conditions. We consider that a significant degree of anemia is the principal, if not the exclusive, indication for the use of whole blood. All types of shock, even in the face of profuse hemorrhage, can and should be treated with plasma until the state of shock is relieved. Then, if sufficient anemia is present, whole blood can be administered. However, it is clinically obvious at times that red cells are needed. Dilute plasma is preferable for the treatment of shock because it can be used in any required amount, does not

need grouping or cross matching, can be given much more rapidly than whole blood because of its lower viscosity, and supplies needed fluid and electrolytes as well as blood protein. For emergency use we maintain a supply of plasma and a set for its administration in each operating suite, emergency receiving room, and the obstetric delivery suite.

The regulations governing use of the service are designed to aid its efficiency. A requisition card (shown in Table 2) must be filled out by the physician in charge of the case and sent to the laboratory with 5 cc of the patient's blood. He also arranges for a suitable number of donors to come to the laboratory to give blood at one of the periods regularly designated for that purpose. Prospective donors are instructed to report after having fasted for at least four hours. Special arrangements are made for those few who cannot come at a regularly scheduled time. Donors for emergency use are taken care of at any time. Except for emergencies, no blood or plasma is issued outside of regular laboratory hours, and donors are to be sent in to replace the amount requisitioned prior to the expected time of use if possible. Thus we find maintains an adequate whole blood and

Every effort is made to exclude pyrogens from our equipment by using the Vacolter solutions for infusions and by having the collection of blood and the maintenance of all equipment used in the transfusion work supervised and done in one place. Only freshly distilled water and fresh, sterile isotonic saline are used in cleansing and preparing the equipment. Tap water is never used for such purposes.

During the first three months of this service we gave over 300 transfusions of the various preparations of blood and plasma with no adverse reactions. Sixty-five flasks of the dilute preserved plasma have been used with excellent clinical results.

### Conclusions

We have described what might be considered a complete transfusion service. It has all the advantages of a simple blood bank and also supplies fresh blood, fresh plasma (whole or dilute), and preserved diluted plasma. It provides a valuable store of preserved blood and plasma for emergencies and a new plasma method that utilizes the older collections, eliminates centrifugation, and makes possible the routine use of the freshest blood in each group for whole blood transfusions. The preservation of blood is

certainly advantageous in emergencies, but the shorter the period of whole blood storage the better it will be as such for therapeutic use. We have found that with this technique the preserved blood that we use for transfusions is rarely over four days old, and the exceptions that do occur are usually with bloods of the two rare groups.

The new method for the preparation of dilute blood plasma which we have presented has proved entirely satisfactory. It is easier, cheaper, and safer than any method yet described. It enables any hospital to prepare plasma with a minimum of equipment. The method should be of particular value for the small hospitals and for mass production for military use.

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### COURSE ON THE TREATMENT OF COMMON DISEASES

Dr. Clayton W. Greene, of Buffalo, has arranged a course on the treatment of common diseases for the Saratoga County Medical Society at the Saratoga Hospital in Saratoga Springs. All the lectures have and will be given at 3:30 P.M.

The following have been completed: November 27, 1940, "Treatment of Precordial Pain," Dr. Clayton W. Greene, December 4, "Treatment of Dyspnoea," Dr. Frederick T. Schnatz, December 11, "Treatment of Low Back Pain," Dr. Frank N. Potts, December 18, "Treatment of Epigastric Distress Following Meals," Dr. A.

H. Aaron, January 8, 1941, "Treatment of Common Skin Lesions," Dr. Earl D. Osborne, and January 15, "Results of Modern Methods in the Treatment of Anemia," Dr. Francis D. Leopold, all of Buffalo.

On January 22, Dr. Arthur Purdy Stout, of New York City, will discuss "Problems in Tumor Diagnosis," and on January 29 "Problems of Gastric Cancer" will be given by Dr. Harold D. Harvey, of New York City.

The last two lectures in this course (the ones on malignant disease) are given in cooperation with the State Department of Health.

### COURSE ON PEDIATRICS

Dr. Charles Hendee Smith, professor of pediatrics, New York University College of Medicine, New York City, has arranged a course on pediatrics for Chemung County Medical Society. The lectures are held at the Mark Twain Hotel, Elmira, at 6:30 P.M.

On January 8 "The Pneumonias of Childhood" were discussed by Dr. Charles Hendee Smith. The following lectures are still to be given: February 12, "Rheumatic Fever, Chorea and

Heart Disease," by Dr. Katherine Dodge, professor of pediatrics, New York University College of Medicine, and March 12, "Preventive Pediatrics and the Periodic Health Examination," by Dr. Gaylord W. Graves, clinical professor of pediatrics, New York University College of Medicine.

A last lecture in this course (one on "The Growing Feet of Children") has not been definitely arranged.



FIG 7. Flask of freshly collected blood (in preservative) showing the tube containing the cell suspension and the capillaries of serum attached to the flask.

are readily available for cross matching. The remainder of the 7 cc. of blood is sent on for the routine serologic tests, which are those approved for the Public Health Laboratories of the State of New York. All collections are numbered serially, and each number is preceded by the blood group letter (Landsteiner), which gives each one an identifying unit number. This, together with the above data concerning the blood and the name of the person who does each test, is recorded on the donor card. The results of the regular serologic tests are added as they are reported to us. Each flask of blood is marked with the donor's name, date, and the unit number. The completed donor cards are filed according to the blood group. When a collection of blood has been stored for fourteen to sixteen days, the plasma is drawn off and the donor card is placed in the plasma file. It is possible to increase the preliminary storage period to twenty days if necessary.

In order to facilitate the utilization of blood collections, we perform a rapid flocculation test for evidence of syphilis. This is a procedure devised by Dr. O. D. Chapman, and it has been used here in Syracuse in its present form as an emergency test for the past two years.\* It is simple, safe, easy to

read, and takes only about twenty minutes to carry out. This test is done on all of our collections. We do it as many times a day as is necessary to make blood available for use, and we have found it exceptionally satisfactory.

On receipt of a requisition card, if it is felt that the indications for the kind of blood or plasma requested are not clear, the case is discussed with the physician-in-charge before approval is given. If whole blood is needed, the patient's blood group is determined, the proper kind of a homologous blood is obtained, and the two are cross-matched. These data and the unit number of the blood to be used are recorded on the reverse of the requisition card and signed by the person doing the tests. The recipient's name, hospital, and ward or room number are entered on the back of the donor card. If plasma is required, the proper kind is obtained and the same data are recorded on the two cards (except that grouping and cross matching are not necessary). The blood or plasma, with the requisition card and a filter drip venolysis set, is sent to the patient's ward at the time requested. The physician giving the transfusion must fill in a report in the space provided on the back of the requisition card with a detailed description of a reaction, should one occur. All reactions are investigated by the service, and a complete rechecking is made if necessary. The requisition card is returned to the laboratory and is joined to the proper donor card. The two are then filed under the patient's name.

All of the grouping and cross matching is done by the vaseline sealed, hanging drop method and must be observed for thirty minutes, with a minimum of twenty permissible in emergencies. The so-called "universal donor" blood is only used in case no homologous blood can be made available. We do not allow the heating of any blood or plasma before or during its administration and wish to emphasize that this applies to these fluids after refrigeration. That even extremely cold blood is not harmful and that warming it causes some reactions have been demonstrated.<sup>1,2</sup> All transfusions of whole blood are begun slowly at not more than 60 drops a minute for the first fifteen to twenty minutes. After this period, when the greatest danger of a serious reaction has passed, the rate of flow can be speeded to suit the needs of the case. Plasma may be given as rapidly as seems necessary, since no reactions (except those due to pyrogens) have been reported with its use.

\* The technique is soon to be published.

(2) The results of agglutination tests are not conclusive Eagleton and Baxter,<sup>2</sup> Hammerschmidt,<sup>3</sup> Ewing,<sup>4</sup> Nishimoto,<sup>5</sup> Murray,<sup>6</sup> Robinson and Peeny<sup>7</sup> divided the diphtheria group into at least ten to fifteen different serologic types with a number of strains, either remaining outside of these groups or being magglutinated altogether. The serologic individuality of the bacilli is nearly as strongly marked as with influenza bacilli. No sign of real type differentiation appears to be connected with the agglutinative type. The same is to be said about *complement-fixation*, attempted by Bandi<sup>8</sup> as early as 1903, by Menton, Cooper, and Fussell<sup>9</sup> in 1933, and by Labranca<sup>10</sup> in 1938. All these serologic reactions do not appear to be characteristic of biologic types and are not stabilized. No less unstable and of no greater value in differentiation are the hemolytic and hemodigestive qualities of diphtheria bacilli and their different behavior toward different sorts of blood.

Type-specific polysaccharides have been recovered by Chinese authors (Wong and Tung<sup>11</sup>). These products behaved like polysaccharides of pneumococci, being antigenic and giving specific reactions in precipitation and absorption tests, however, the principle was not applicable to differentiation, as these sugars happened to occur in different groups even in diphtheroids.

(3) The existence of type-specific *bacteriophages* has been claimed by Keogh, Simmons, and Anderson<sup>12</sup> in Melbourne (Australia, 1938). These authors found two kinds of bacteriophages in cultures, they conclude from their experiences that there may be differences in the susceptibility to and the originating of phages in different cultures, as Stone and Hobhy<sup>13</sup> demonstrated in 1934. The Australian authors connect those differences with group differentiation. It is yet too early to judge these data in spite of the large number of strains investigated.

(4) Diphtheria bacilli may be cultivated in a variety of mediums, and in many of them they show differences of growth. In broth we see cultures thoroughly turbid, others with clear fluid and pellicles on the surface, still others with granular deposits. The formation of pellicles is often regarded as an indicator of good toxin-producing power. In 1931 Dimitrijevicz-Speth and Jovanovic<sup>14</sup> claimed that strains coming from cases with laryngeal stenoses always made the broth turbid, while other strains growing in broth left the fluid clear. On plates of agar, or blood plates, or on those of very poor mediums, one meets dif-

ferent forms of colonies like the well-known rough and smooth forms of other bacteria. Hammerschmidt,<sup>15</sup> as early as 1924, described three different colonial forms obviously corresponding to the newly reported colonial forms of English authors. In 1928 Parker<sup>16</sup> differentiated on trypsin-serum-agar plates the light growers with normal toxogenicity, the rough heavy growers with little toxogenicity, the smooth heavy growers with high toxogenicity. The use of tellurite, initiated by Conrad<sup>17</sup> (1912), aimed at the differentiation from diphtheroids and was widely utilized (like the addition of cysteine) for the improvement of diphtheria mediums. Other methods referred to carbohydrate fermentation. The results seemed to be contradictory within the diphtheria group itself but rather uniform for the separation of the diphtheroids. This method is now again becoming more valuable in the differentiation of diphtheria types, although Frobisher<sup>18</sup> recently emphasized that no well-differentiated biochemical groups were revealed by his careful studies.

Finally, there are studies of the metabolism of the bacilli and the use of synthetic mediums. These studies go back to Uschinsky<sup>19</sup> in 1893. Good work has been done by Braun and Hofmeyer,<sup>20</sup> who were successful in obtaining synthetic mediums and who studied the food-stuffs that were vitally needed. They found pretentious and unpretentious varieties among these strains and noted this as a matter of physiologic interest and not of differentiation.

In this country Pappenheimer, Mueller, Cohen, Evans, Happold,<sup>21-24</sup> and others recently reopened these studies with synthetic mediums using a series of amino acids, lactic acid, cysteine, and traces of heavy metal ions. They obtained toxin production, but they admit that optimum conditions for practical application and for the use of all strains have not as yet been developed.

In their excellent work Anderson, Happold, McLeod, Cooper, and Thomson<sup>25, 26</sup> took advantage of these methods of differentiation. They used a tellurite agar containing boiled blood (chocolate agar) for colonial form and examined growth in broth, alkali production, sugar fermentation, and hemolysis. In this manner three forms were differentiated.

- (1) Coarse, grayish colonies, flat with crenated edge on plates, growing with pellicle in clear broth, fermenting starch, morphologically short rods poor in granules.
- (2) Black-domed shining colonies, uniform turbidity in broth, does not fer-

# CURRENT PROBLEMS IN DIPHTHERIA

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**D**IPHTHERIA is one of the best studied communicable diseases. The etiologic agent is known, and the mechanism of its pathogenicity through the production of toxin is well understood. Effective treatment by antitoxin is available. Attempts to free mankind from this disease through specific prophylaxis, especially by means of active immunization, have been promising. Nevertheless, many unsolved problems remain which arise with renewed emphasis from time to time. Thus, epidemiologic, therapeutic, and immunologic considerations are under discussion now as they have been in the past.

The severity of the disease changes continuously in different countries, rising here and falling there, and the evolution of the morbidity curve in a given country is more or less an object of speculation. We are in no position to undertake experimental epidemiologic studies such as have been made with mice in other infectious diseases, since animals spontaneously susceptible to diphtheria are not known. Climate, latitude, standards of living, heredity, artificial immunization, all these factors seem to influence the spread of the disease. From a historical point of view, times of no interest (almost no knowledge of the disease) alternated with times of the greatest concern. Some countries were ravaged by severe, long-lasting epidemics, and other countries were almost completely spared. The ingenious assumption of Gottstein,<sup>1</sup> which, in addition to seasonal and annual periodicity, calls attention to the existence of so-called secular curves of diphtheria, though very interesting, fails to provide us with more than a statement of facts.

The shift in age distribution in many areas has been ascribed to social factors as well as to increased artificial immunization. The latter, however, as judged by antitoxin level or negative Schick reaction, is not always concomitant with insusceptibility to attack. Strangely enough, there is even doubt as to the development of immunity following recovery from the disease.

Two topics seem to us of particular significance in attempts to explain the epidemic waves of diphtheria.

- (I) The bacteriologic differentiation of *Corynebacterium diphtheriae* as related to clinical and epidemiologic observations
- (II) The manifestations of immunity, especially the so-called natural immunity, as shown by specific immune reactions

I—Modern bacteriology is inclined to divide a given bacterial species into type strains that differ in serology, morphology, or biochemistry, with a view to correlating such differences with the pathology and epidemiology of the disease. The majority of pathogenic bacteria and viruses are now being considered in this way. By way of reference to the pneumococci, *Salmonella* group, bacilli of dysentery, encephalitis, and influenza viruses, it is obvious that some progress has been made.

Attempts have been made along similar lines with the diphtheria bacillus for almost fifty years, previously in order to separate the diphtheroids from the diphtheria bacillus, later to subdivide *Corynebacterium diphtheriae* itself. Some of the most frequently used methods of differentiation related to (1) virulence and toxin production, (2) serologic tests, (3) bacteriophage activities, and (4) cultural characteristics and metabolic activities.

(1) *Virulence* as determined in guinea pigs or rabbits is variable. The occurrence of avirulent forms is beyond doubt, but one may find virulent and avirulent strains side by side in the same patient. Slightly virulent or avirulent strains with some unusual morphologic features may be recovered from convalescents. This leads to the fundamental question already asked by Roux and von Behring: "Is there a transformation from the real Diphtheria-Bacillus to the Diphtheroids during recovery of the patient?" We are not sure that virulence in guinea pigs and in man are the same, but we must admit the occurrence of all grades of virulence in real diphtheria bacilli and the loss of virulence in cultures (we have no knowledge of acquisition of virulence by nonvirulent strains). As a method of differentiating strains or types such differences are of no value. The experiences with diphtheria toxin are very similar. Existing differences in toxin production, such as they are, do not help in a differentiation within the group.

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In this country information has come mainly through the work of Frobisher,<sup>39 40</sup> in Baltimore, who pointed out interesting contrasts as to biologic properties of the bacillus and type incidence in different parts of this country. The following generalization seems permissible. In countries with widespread epidemics and severe outbreaks the existence of sharply differentiated types of diphtheria bacilli, often clinically in agreement with the nomenclature of the British authors, is readily confirmed. In countries with mild epidemics and low morbidity, difficulties in differentiating types are often encountered, and, if types are found, they do not seem to be of any clinical significance. In such areas one observes many avirulent and atypical strains that cannot be classified as belonging to any one of the described types. Such deviations have also been described in Germany, England, and elsewhere. Wright and Christison,<sup>41</sup> for instance, enumerate six instead of four types, and other workers suggest that there may be many more.

Opinions differ as to the clinical importance of the types irrespective of their epidemiologic distribution. Clauberg<sup>42</sup> once proposed that the *mitis* type in carriers was insignificant from the public health point of view, a suggestion which has found no support anywhere. There are other authors who deny any correlation with clinical findings. Gundel,<sup>43</sup> in Germany, claims that 46 per cent of his *gravis* strains were found in mild cases. Many experienced workers have observed very severe and fatal cases in diphtheria caused by the *mitis* type. In consequence of these contradictions, some authors propose to do away with the terms *gravis*, *mitis*, and intermediate and to replace them with letters A, B, C, or with figures I, II, III, etc. (Stuart,<sup>44</sup> Gundel,<sup>43</sup> and von Bormann<sup>45</sup> a o.)

The status of the atypical or indeterminate strains is as yet uncertain. Frobisher is absolutely right in stressing the necessity of agreeing upon type characterization. But these characteristics seem to vary in different countries, epidemics, and laboratories according to the type of mediums used. More than half a dozen suggestions have been offered for suitable nutrient mediums. The differences concern methods of preparation, such as the kind of agar base, the sort and treatment of blood, the presence or absence of tellurite, etc. Not a few authors emphasize that no reliance can be placed upon the appearance of sharply differentiated colonial

forms and that preference should be given to the starch-fermentation reaction as a more reliable test, other workers have more confidence in the type of growth in broth or in a combination of several methods of differentiation. Frobisher insists that all seven described characteristics must be present to classify a strain as a *gravis* type, von Bormann, on the other hand, does not believe in this classification because these seven characteristics are not always present. We may well appreciate the difficulties when we learn that the famous Park-Williams Number 8 strain, cultured in most of the world's laboratories, has been classified as a *mitis* as well as an intermediate!

The question therefore arises: Are these types really established types or are they "Standorts-Varietaeten" (variants locally restricted), do they remain the same under observation in cultural mediums, in the body of animals, and in human beings? A number of variations has been described by many authors, rough and smooth dissociation, papilla formations, etc., but the few authors who have worked with single-cell cultures insist upon the stability of the types *in vitro*. As to stability in the body, one is reminded of the older publications of Bernhardt,<sup>46</sup> and it seems that these experiments should be continued. The observations made by Weigmann and Koehn,<sup>47</sup> that types may change *in vitro* when in contact with human saliva, are not convincing. Those adhering to the point of view of variability must bring the burden of proof. Up to the present the more orthodox concept prevails.

Observations of great interest were made in groups of individuals. Members of the same family usually carry the same type, patients as well as healthy carriers. The recovered patient generally has the same type at various intervals. But there are exceptions. From 5 to 10 per cent of the convalescents show a change of type at home, or two types occur at a later date. These figures rise to 25 per cent and more if patients are held in diphtheria wards and to 68 per cent if patients remain longer than two months in these wards (Glass and Wright<sup>48</sup>). It was concluded that these changes do not indicate the occurrence of variation or mutation but are the result of cross infection much more frequent in hospitals than in homes. The British authors have, therefore, demanded that special wards be assigned to *gravis*-infected patients. Under such a regimen the duration of the carriership may be shortened, new infection with other

ment starch, morphologically long rods with well-marked granules

- (3) Fine growth of flat colonies with black center and translucent margin, granular growth in broth, morphologically barred bacilli with variable amount of granules

When a systematic effort was made to correlate the occurrence of these types with clinical and epidemiologic observations, it was found that the first organism was isolated mostly from severe cases, the second was more frequently recovered from mild cases, and the third again most frequently from the severe cases of the disease. The statistical data appeared to be convincing. In a first survey of 1,500 diphtheria cases they stated a lethality of 15 per cent in cases with the first organism, 0.5 per cent in cases with the second, and 7.5 per cent in cases with the third. Thus, they felt justified in designating as *gravis* the first type, as *mitis* the second type, and as intermediate the third type. In Germany, where the numerical incidence of types has been carefully checked in times of rising epidemics, differences varying from 40 to 80 per cent *gravis* have been observed in different localities (Pesch,<sup>27</sup> in Cologne, Sohlf and Werber,<sup>28</sup> in Berlin). All three types have been found in the more widespread epidemics, whereas in an outbreak of a localized character in almost all instances not more than one single type has been recovered. The patient, as well as his contacts, carried the same type until recovery, although there are some exceptions.

Pathologic, anatomic, and statistical investigations indicate that special symptoms apparently coincide more or less frequently with the types. In a review issued in 1936<sup>29</sup> and covering more than 6,000 of these cases, the English authors summarize these data as follows:

	<i>Gravis</i>	<i>Intermediate</i>	<i>Mitis</i>
Lethality	13.3%	8.6%	2.3%
Paralysis	17.3%	9.9%	4.5%
Croup	2.3%	1.3%	7.5%
Hemorrhages	3.5%	3.7%	0.4%

More recently, McLeod and his collaborators,<sup>30</sup> investigating autopsy findings on a large scale, emphasize that *mitis* may be a mighty producer of large membranes, *gravis* working more in an inflammatory way and as a cause of lung complications. Therefore, the assumption seems to be justified that these types are independent characteristic types within the species *Corynebacterium diphtheriae*.

All types produce toxins that are qualita-

tively identical. The *mitis* seems to be the best toxin producer of all, in spite of its lower aggressiveness (Parish, Watley, and O'Brien<sup>31</sup>). Virulence in guinea pigs and rabbits is proved in each of the groups, although sometimes failing in *mitis* and intermediate, whereas virulence is almost regularly present in the *gravis*. *Gravis* bacilli are more frequently found postmortem in man than either of the other types (McLeod, Orr, and de Woodcock<sup>32</sup>). The same is true following experimental inoculation of guinea pigs (Zinnemann and Zinnemann,<sup>33</sup> Robinson and Marshall<sup>34</sup>). If this were a sign of higher invasive power, it might be checked by special experiments. Gundel and Erzini<sup>35</sup> infected guinea pigs with *gravis* and *mitis* strains and sometime later injected them with diphtheria antitoxin. They were able to protect the *gravis*-infected animals from death only if the serum was administered within eight to twenty-four hours after infection, the *mitis*-infected animals still survived when protective doses of serum were given as late as ninety-six to 144 hours after infection. Preventive doses of serum proved efficient for a period up to ten days before infection with *gravis* and up to twenty days with *mitis*. Even in human beings the *gravis* and intermediate seem to overcome immunity to a greater extent than the *mitis*. Thus, in Cork, Leeds, and Manchester the strains recovered from so-called immune or immunized persons belonged to *gravis* type in 107 cases, intermediate type in 20 cases, *mitis* type in 8 cases, and atypical form in 1 case, or of 2,103 *gravis* cases, 5.1 per cent occurred in immunized (of these fatal or severe 2.4 per cent), of 815 intermediate cases, 2.5 per cent occurred in immunized (of these fatal or severe 1.1 per cent), of 916 *mitis* cases, 1.3 per cent occurred in immunized (of these fatal or severe none).<sup>36</sup> And if we add that (according to Weiland and Leimbach<sup>36</sup> in 1939) resistance against heat and disinfectants decreases from *gravis* to intermediate to *mitis*, we seem to have a clear gradation—*gravis* and intermediate as the more formidable organisms with greater invasive power, greater resistance, and perhaps, as has been assumed but not yet proved by the British authors, with some enhancement of their toxin-producing ability. On the other hand, new experiments with spermophils (Dimtrievich-Speth and Arsenijevich<sup>37</sup>) and white mice (Zinnemann<sup>38</sup>), however, show that the pathogenic potency of the three types in these animals does not correspond with their behavior in man or guinea pigs.

ical latitude, and racial differences. We may be certain only that occurrence of antitoxin is more frequent in adults than in young children and that the incidence of diphtheria is the reciprocal of this. However, this parallelism need not reflect cause and effect, the more so since we know of diseases that exhibit no difference in age selection in spite of an increase in antibodies with age. The same is to be seen in animals that are not at all susceptible to diphtheria but that show a similar increase of antibodies with age. The more widespread the disease is, it was claimed, the greater is the opportunity of contact with diphtheria bacilli and of the acquisition of immunity through inapparent infections. This general statement, however, fails to explain the increase of diphtheria over a large number of years in certain countries and the spectacular decrease at the same time in other countries.

Since the famous investigations of Zinher, Park, and others, it is generally known that in civilized countries the children of the well-to-do possess less diphtheria antitoxin than children of the same age of lower social standing. It has been taken for granted that more densely populated urban areas show invariably higher amounts of antibodies than thinly populated rural ones. Not so long ago, however, observations by Chason<sup>62</sup> in rural Alabama proved a higher percentage of Schick-negative children in the less dense areas. In these areas 68 per cent of 6-year-old children and 92 per cent of ten-year-old children were negative,\* figures even higher than they are in metropolitan congested areas.

Diphtheria is a disease of the temperate zones, decreasing toward the equator and toward the poles. For a long time the disease was not believed to exist at all in the tropics or in the arctic regions. On the other hand, there are numerous observations of a very high percentage of negative Schick reactions and of circulating antitoxin in natives of tropical countries, these natural antibodies also occur in populations of islands in the northern zones. A report of 100 per cent negative Schick reactions in inhabitants of the island of Koguljew (69 degrees northern latitude) is accompanied by the statement that there are neither diphtheria cases nor carriers in this isolated population (Asbelew and Margo<sup>64</sup>). Summarizing the very large number of observations† and comparing them with the figures coming from countries with

widespread diphtheria, we find that in the temperate zones immunity increases up to the fifteenth to eighteenth year of life, reaching an endpoint of about 70 per cent in adults, in tropical countries such amounts are already reached in the fifth year of life, and the adult endpoint is as high as 90 to 100 per cent. In the Arctic zone the increase of antibodies is generally slower with age, and the level reached in adults rarely surpasses 60 to 70 per cent. The amazing fact therefore emerges that in countries where the incidence of diphtheria and the occurrence of diphtheria bacilli are very rare natural immunity is either extremely high (tropics) or not much lower than in the Temperate Zones (Arctic zone).

Several theories have been advanced to explain this aforementioned fact: (1) differences in racial susceptibility to diphtheria and in individual ability to produce antibodies, and (2) climatic influences on the host or the operation of other exogenous factors on diphtheria bacilli transforming them into harmless saprophytes without loss of antigenicity. Both possibilities seem to be of some significance. Observations on white people in tropical countries and on colored people in the United States point to differences of races, but no definite decision has as yet been arrived at. On the whole, the observations agree upon a lower percentage of immune white people living in the tropics as compared with the native population, in this country, however, Doull<sup>65</sup> claims to have obtained more positive Schick reactions with Negroes in Baltimore. A purely racial influence does not seem to be buttressed extremely well, climatic and social conditions apparently being of greater importance. Thus, in Baltimore the morbidity of the Negroes, in spite of a lesser degree of natural immunity, stands below that of the white population (Doull), in New York, on the contrary, a distinctly higher morbidity among Negroes has been demonstrated by Emerson.<sup>66</sup>

In addition to the facts already discussed, it is interesting to note that authors like von Gröer and Kassowitz,<sup>67</sup> Friedberger, Bock, and Fuerstenheim,<sup>70</sup> and Hirschfeld<sup>71</sup> consider normal antibodies a consequence of physiologic processes and a function of age or serologic maturation rather than an effect of immunization of any kind. Factors of heredity were taken into account by Eigenbrodt<sup>72</sup> in relation to susceptibility and by Park, Zinher, and Serota<sup>73</sup> in relation to Schick reaction. Hirschfeld postulated the existence of some relationship between blood groups and the

\* Recently confirmed by Gill.<sup>63</sup>

† See Ramon<sup>68</sup> and Jensen.<sup>64</sup>

types may be prevented, and perhaps the dreaded return cases may eventually disappear.

To summarize The differentiation of diphtheria types is most important from the point of view of bacteriology, pathology, and epidemiology, but the wide variations obtained by observers in different localities make it difficult to define any basic standards. Moreover, the extent of epidemics, as well as climatic factors and the intervention of host resistance, may have some influence upon the germ's "phenotypus."

II—Problems of immunity rank next in our discussion. Admittedly, passive administration of antitoxin is a certain preventive against the disease, and active immunization seems to be very successful, especially in this country. This success has been determined not only by the trend of morbidity and mortality but is also corroborated by the results of immunologic tests. The presence of antitoxin in the blood and a negative Schick reaction are customarily looked upon as a gauge of the efficacy of immunization. The same biologic tests have been taken as criteria of protection of whole population groups not subjected to artificial immunization, assuming that the appearance of antibodies in such instances is the result of repeated subclinical infections. Schick reaction, presence of antitoxin, and susceptibility are all mentioned in the same breath, but the causal relationships between these factors have not been conclusively proved.

Three questions must, therefore, be answered (1) Is there any demonstrable immunity after recovery from the disease? More than twenty years ago I postulated that no such immunity exists. The frequency of second clinical attacks, as well as the failure of consecutive immunologic responses, argues against such an assumption (Seligmann<sup>10</sup>). As early as 1916, Park and Zingher<sup>11</sup> found that more than 65 per cent of diphtheria convalescents were Schick positive. Recent investigations have confirmed this observation (Rosling<sup>12</sup>). Vejnar<sup>13</sup> reported that natural increase of antitoxin develops more slowly in convalescent children within the next two years than in children of the same age who did not have the disease. Therefore, the majority of convalescents possess neither antibodies nor show a negative Schick reaction.

(2) Does the Schick reaction run parallel with antibody titer? It was formerly assumed that a negative Schick reaction was observed when a certain minimum amount of

antibody exists in the blood, and the level was established at about 0.01 to 0.03 units per cubic centimeter of serum. Today we know that this is not correct. Antibody titer can differ in the blood and in the tissues. Sensitiveness of the skin, as well as physiologic fluctuations (menstruation), also plays a role (Jungeblut and Bailly<sup>14</sup>). Newborn babies and infants invariably exhibit negative Schick reactions in the absence of the slightest trace of antibodies (Okell,<sup>15</sup> Glenny<sup>16</sup>). Magara<sup>17</sup> found negative Schick tests in young children in which the antibody level was less than  $1/200$ . An incapacity to react on the part of the child's skin may explain some of these observations, but even in older children significant differences have been reported, especially in vaccinated children. Bundesen<sup>18</sup> saw negative reactions with less than  $1/250$  unit per cubic centimeter, and Parish, Edin, and Wright<sup>19</sup> found Schick negativeness with antitoxin titers even below  $1/500$  unit per cubic centimeter. They concluded, as did Jensen,<sup>20</sup> that negative Schick reactions may occur with less than  $1/2,000$  antitoxic unit in the blood of immunized persons. "There is no fixed antitoxin titer at which individuals pass from the negative to the positive group, or vice versa." Finally, Sigurjonson,<sup>21</sup> referring to varying susceptibility of the tissues, claimed that in a transition zone of 0.004 to 0.01 antitoxic units per cubic centimeter of serum positive as well as negative reactions may be possible. We know that even this broad transition zone is too narrowly limited. The only fact that can be asserted with certainty is that the average titer of antitoxin is higher in Schick-negative than in Schick-positive individuals.

(3) Does a negative Schick reaction and an established antibody titer mean clinical protection? As a matter of fact, attacks of diphtheria have been observed in individuals with a high amount of antitoxin in the blood, resulting either from natural or artificial immunization. Not long ago Procházka<sup>22</sup> reported diphtheria in about 40 persons who had from  $1/25$  to 1 unit before their attack. Moreover, hundreds of cases have been reported among successfully immunized children.

It becomes clear that certain epidemiologic questions in diphtheria require further study before one can say whether acquired protection is specific or nonspecific in character. Thus, the appearance of antitoxin or a turn in the Schick reaction have been correlated with age distribution, morbidity rates, economic level, density of population, geograph-

# STREPTOCOCCUS VIRIDANS PNEUMONIA

## Report of Eight Cases

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IT IS our impression that many practitioners feel that any *Streptococcus viridans* infection is invariably fatal. Since we are unable to find any case reports in the American literature on *Str. viridans* pneumonia, it may be of interest to report 8 cases.

During the early winter of 1939 in a series of 36 consecutive pneumonias at the Elizabeth General Hospital and Dispensary, 8 cases reacted atypically and were found by sputum culture to be *Str. viridans* pneumonias.

While we realize that a diagnosis of *Str. viridans* pneumonia from sputum culture alone may be cause for criticism because the organism is occasionally found in routine throat cultures, yet we feel that the following observations justify the diagnosis:

- (a) Atypical clinical course of the pneumonia
- (b) Absence of typing with all available types of pneumococcus
- (c) Absence of response to sulfapyridine
- (d) Florid growths of *Str. viridans* from all the sputums except in 1 case in which there were growths of both *Streptococcus hemolyticus* and *Str. viridans*
- (e) Florid growth of *Str. viridans* from pleural exudate in the only case in which thoracentesis was indicated

In each of these cases routine orders of the medical service were carried out as follows: (1) sputum typing, (2) blood culture, (3) complete blood count, (4) urinalysis, (5) x-ray of chest, and (6) sputum cultures for nonpneumococcal pneumonias. These orders were carried out on all of the cases except 1 in which the patient expired before an x-ray was obtained.

## Case Reports

**Case 1**—A. S., a white man, aged 29, first became ill six days prior to admission, at which time he complained of pain in the chest and cough. He was under the care of his family physician for several days and, showing no improvement, was hospitalized. On admission the chest observations were not distinct. On the

following day, however, there were increased voice sounds and rales over the left base. These observations were corroborated by x-ray. The Neufeld reaction for all available groups done on the day of admission was negative. The white blood count was slightly elevated, and the urine showed nothing unusual. Serology and blood cultures were negative. The sputum was rusty colored and negative for tuberculosis. Three hundred grains of sulfapyridine were given, a small amount of it by rectum because of the extreme nausea. The highest temperature was 104.8 F. This gradually came down by lysis and became flat on the twenty-seventh day of hospitalization. He was discharged in good condition on the thirty-sixth day of hospitalization. The pneumonia was of the lobar type. Sputum culture on the nineteenth day of hospitalization revealed a florid growth of *Str. viridans*.

**Case 2**—J. LeM., a white man, aged 45, became ill three weeks prior to hospitalization with cough productive of yellowish sputum, malaise, difficulty in breathing, and lack of appetite. Upon admission his temperature was 103 F. Physical examination showed a definite lag of the left chest. There was no evidence of any consolidation. However, there were high-pitched sibilant rales throughout the entire chest, with moist rales at both bases posteriorly. X-ray revealed a mottling of both lungs resembling a nontuberculous infection. The Neufeld reaction with all available groups was negative. The white count on admission was 17,300 with 79 per cent polymorphonuclears, 10 per cent lymphocytes, 2 per cent monocytes, 1 per cent eosinophils, and 8 per cent stab forms. The red count showed nothing unusual. Sputum smears were negative for pneumococci and tuberculous bacilli. Sputum cultures showed a florid growth of *Str. viridans*. Blood cultures were negative. Blood chemistry, urinalysis, renal function tests, and agglutinations for typhoid, paratyphoid, undulant fever, and tularemia were all negative. Electrocardiogram was within normal limits. Two separate courses of sulfapyridine were given with no apparent effect on the temperature or the course of the disease. He received 410 grains in all. Following the second course, he developed an exfoliative dermatitis which we attributed to the drug. The highest temperature was 103.8 F. The fall was by lysis and did not become flat until the fifty-eighth hospital day. He was discharged on the sixty-first day as improved. The pneumonia here was of the bronchopneumonic type.

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We are indebted to Dr. Emil Stein and Dr. Joseph J. Labow for the use of Cases 4 and 3 respectively.

potentiality of antibody production. However, it is well known that transmission of the disease from the first case to other members of the same household does not occur very frequently, in spite of the presence of presumably susceptible children. While my own experience in Berlin showed that the disease spreads to other members only in about 12 per cent of the affected families, the figures of Moldovan<sup>74</sup> in Rumania reveal a still lower percentage, i.e., 7 per cent. When, finally, consideration is given to the fact that diphtheria antitoxin has been found in horses and in some species of monkeys, here too increasing with age, the relatively simple assumption of a specific immunization arising through latent infections becomes less and less tenable. Our difficulties in providing a satisfactory explanation are further enhanced by haphazard occurrence of atypical strains, biologic transformation, and dissociation of the diphtheria bacillus which seem to occur with particular frequency in countries with a low diphtheria morbidity.

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### 'ROUND AND 'ROUND

"To get his wealth  
He spent his health,  
And then mid night and morn  
He turned around,

And spent his wealth  
To get his health again."

—Quoted by President of Southern Medical  
Auxiliary at Greenville, S. C.

TABLE 1—SHOWING AMOUNT OF SULFAPYRIDINE GIVEN, THE HIGHEST TEMPERATURE, THE DAY OF HOSPITALIZATION ON WHICH THE TEMPERATURE BECAME FLAT, THE DAY OF THE DISEASE ON WHICH THE TEMPERATURE BECAME FLAT, AND THE FINAL OUTCOME

Case	Sulfapyridine, Grains	Highest Temperature	Hospital Day Temperature Flat	Day of Disease, Temperature Flat	Outcome
1	275	105	27th	33rd	Improved
2	410	103.8	55th	79th	Improved
3	365	105.4	23rd	25th	Improved
4	75	106.4	Never	Never	Expired
5	220	103.2	6th	16th	Signed release
6	None	102	20th	22nd	Improved
7	1,140	105	Never	Never	Expired
8	584	103	15th	25th	Improved

plained of headache, generalized aches and pains, and anorexia ten days prior to admission. Seven days before admission he had a temperature of 104° F and complained of chilliness. Three days before admission he had pain in the right lower part of his back, and he coughed up blood-tinged sputum. When hospitalized the patient exhibited classic signs of consolidation of the entire lower two-thirds of the right lung posteriorly. The white count on admission was moderately elevated, and the red count was within normal limits. The Neufeld reaction for all available groups was negative. Sputum culture revealed *Str. viridans*. Blood cultures were negative, as was the urine except for occasional traces of albumin. X-ray showed pneumonic consolidation of the middle and lower lobes of the right lung. Temperature on admission was 102.4° F. It came down gradually and was flat on the fifteenth day. He was discharged as improved.

### Comment

In reviewing the clinical behavior of the cases, one notes that in 6 the physical findings were those of lobar pneumonia and that in 2 the findings were of the bronchopneumonic type. However, in none of the cases was there a crisis. The temperature in the recovered cases came down slowly by lysis except in 1, Case 5, where the temperature became flat on the sixth day of hospitalization and the sixteenth day of the disease (Table 1). This patient signed her release on the twenty-second day of hospitalization at which time, although there was marked clinical improvement, the pneumonic signs in the chest persisted. Of interest in this case also is the fact that it was the only one in the series which showed an organism on culture other than the *Str. viridans*. Here the sputum culture showed both *Str. viridans* and *Str. hemolyticus*. The sputum cultures in all the other cases showed a florid growth of *Str. viridans* only. Blood cultures in all of the cases were negative. The only complication due to the disease was observed in 1 of the 2 deaths of the series. In Case 7 there developed a small pleural effusion which on

culture revealed *Str. viridans* and also a pericarditis just prior to death on the fifty-first day of hospitalization. In all she received 1,140 grains of sulfapyridine. The other death, Case 4, had been ill for two days prior to hospitalization and died twenty-four hours after admission. He had received 75 grains of sulfapyridine in all. Both of these cases were of the lobar type.

From this small series of cases it seems that the *Str. viridans* does not produce a definite clinical picture in lung infections, however, it should be suspected in all cases of atypical pneumonia.

As to the value of sulfapyridine in these cases, all we are in a position to say from our very small series is that the response to the drug was not the definitely gratifying response we got in the pneumococcal pneumonias. Calmels,<sup>1</sup> before the advent of sulfapyridine, reported 2 deaths in a series of 11 *Str. viridans* lung infections. In our series of 7 cases in which sulfapyridine was used there were 2 deaths, 1 occurring within twenty-four hours after admission to the hospital.

### Conclusions

1 Eight cases of *Str. viridans* pneumonia are reported, 2 of which expired.

2 Sulfapyridine was given in 7 of the 8 cases, including the 2 which expired. It did not produce the dramatic drop in temperature which we observed in our pneumococcal pneumonias, nor did it seem to alter the clinical course of the disease.

3 In all the cases the temperature came down by lysis, and the time required for the temperature to become flat varied from sixteen to seventy-nine days.

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*Case 3*—W A, a white boy, aged 13, first became ill with a cold two weeks prior to admission. Two days before hospitalization, the patient complained of severe pain in the left chest and began coughing up rusty sputum. Physical examination on admission revealed a pleuritic rub at the left base posteriorly with bronchial breathing in the axilla and coarse rales. There were moist rales throughout the right side of the chest. The white count on admission showed a marked elevation. The red count was within normal limits. The Neufeld reaction with all available groups was negative. Blood culture was negative. Sputum culture showed a florid growth of *Str viridans*. Urine was negative, and x-ray showed a pneumonic process at the left base. Temperature on admission was 104.8 F. Three hundred and sixty-five grains of sulfapyridine were given during the first eight days of the illness and was discontinued when the temperature was 100 F. The temperature became flat on the twenty-third hospital day, and the patient was discharged on the twenty-fifth day as improved. The pneumonia was of the lobar type.

*Case 4*—M L, a white boy, aged 19, first became ill two days prior to admission when he complained of indefinite malaise, headache, and slight nausea. The following day he vomited on numerous occasions and began to expectorate yellowish sputum at first and then rusty sputum. On deep inspiration there was pain at the left base. Upon admission the patient was extremely toxic with signs of consolidation at the right base. The white count was markedly elevated, and the red count showed a mild secondary anemia. The Neufeld reaction with all available groups was negative. Sputum cultures showed a florid growth of *Str viridans*. Blood culture was negative. Lung aspiration was reported as *Staphylococcus aureus* and thought to be due to contamination. Temperature on admission was 102.8 F. The patient expired the following day. In all he received 75 grains of sulfapyridine. The pneumonia was lobar in type.

*Case 5*—E H, a white woman, aged 54, first became ill ten days prior to admission. At that time she complained of a cough and sore throat. Her condition gradually became worse, with fever and dyspnea. Just prior to admission she complained of pain in the left side of the chest. Physical examination revealed dullness of the left base posteriorly, with bronchial breathing and tactile fremitus. The white blood count showed a moderate elevation, and the red count was within normal limits. There was no Neufeld reaction with all available groups. The sputum culture showed a mixed growth of *Str hemolyticus* and *Str viridans*. The urine showed occasional traces of albumin. X-ray of the chest revealed infiltration of the base of the lung. The temperature on admission was 103.2 F and dropped in twenty-four hours to

100 F, where it remained for six days and then became flat. In spite of subjective improvement the signs persisted in the chest until the twenty-second hospital day, at which time she signed her release against our advice. She received in all 220 grains of sulfapyridine. The pneumonia was of the lobar type.

*Case 6*—S L, a white man, aged 51, first became ill two days prior to admission, with pain in the left side of the chest, cough, and expectoration of thick greenish sputum. The patient, suffering from chronic alcoholism, was intoxicated the day before he became ill and fell, striking the left side of his chest. On admission physical signs revealed coarse and fine crackling rales throughout both bases, decreased breath sounds, and slight impairment to percussion over these areas. There was also patchy distribution of increased vocal fremitus. The white blood count was moderately elevated, and the red count was within normal limits. The Neufeld reaction with all available groups was negative. Sputum culture showed *Str viridans*. Urinalysis was negative. X-ray of the chest showed congestion about both roots with infiltration of the lower lobe of the right lung. His temperature on admission was 102 F and dropped to 100 F on the next day. It remained so until the twentieth hospital day. He was discharged as improved on the twenty-third day. This patient did not receive any sulfapyridine. The pneumonia was bronchopneumonic in type.

*Case 7*—V C, a white girl, aged 18, complained of not feeling well a few days prior to admission. On the day of admission she complained of sore throat, cough, malaise, and pain in the right side of the chest. Physical examination at this time revealed very few signs in the lungs. On the following day there was diminished breathing at the right base with slightly increased vocal fremitus. On the third day there were frank pneumonic signs at the right base. The white blood count was moderately elevated, and the red count was within normal limits. The Neufeld reaction was negative with all available groups. Sputum cultures revealed *Str viridans*. There were no tuberculous bacilli found on sputum smears. Blood cultures were negative. Urinalyses were negative except for occasional traces of albumin. The first x-ray of the chest revealed a pneumonic involvement of the lower lobe of the right lung. Subsequent films showed a probable collection of a small amount of fluid in the right lung. Culture of fluid obtained by thoracentesis revealed a florid growth of *Str viridans*. The temperature on admission was 102 F, went up to 105 F, and then became a spiked one. She had five transfusions. In all she received 1,140 grains of sulfapyridine. She expired on the forty-ninth day, at which time a loud pericardial rub was heard. The pneumonia was of the lobar type.

*Case 8*—L H, a white man, aged 26, com-

venously, without apparent interference with urinary drainage, although the autopsy showed that both pelves and all calices were filled with mushy, gritty acetylsulfapyridine concretions. The patient, until death, passed large amounts of urine which reached as much as 44 ounces in twenty-four hours. She had, however, a continuous marked hematuria. The case was that of subacute bacterial endocarditis, and it was thought that the hematuria was due to a renal infarct. The absence of renal enlargement and hydronephrosis on autopsy pointed to the fact that the patient's ureters, which were found to be somewhat dilated, were particularly patent.

Other clinical manifestations are those of ureteral obstruction and may vary from slight unilateral or bilateral costovertebral pain to a typical colic with all its accompanying symptoms such as nausea, vomiting, and general prostration. In the latter the retention of urine above the site of ureteral obstruction is, as a rule, complete. It must be remembered, however, that complete retention may be associated with little or no pain at all. This has been the observation of one of us (R. L. D.) in a large series of ureteral calculi. In the case reported here the pain was more predominant on the right side, although the obstruction was more marked on the left side.

Oliguria undoubtedly indicates an incomplete bilateral obstruction and should call for cystoscopic drainage when it becomes evident that it cannot be relieved by administration of large amounts of fluid by mouth and intravenous injections of dextrose. Oliguria, as a rule, precedes anuria which ensues when both ureters become completely occluded. The recognition of the mechanical nature of this condition is extremely important, as timely cystoscopic intervention may be a lifesaving procedure. In a case reported by Tsao,<sup>8</sup> death occurred in an 8-year-old child from marked oliguria following sulfapyridine administration. The autopsy showed complete obstruction of both ureteral orifices with sandlike material. The patient had hematuria and passed only 80 cc of urine during the week prior to death, the symptoms being attributed to hemorrhagic glomerulonephritis or chemical nephrosis. Tsao states "Had we had the knowledge and suspicion when the patient began to suffer anuria and tried cystoscopic manipulation of the ureter or even emergency nephrostomy, the life of the patient may very well have been saved." Carroll,<sup>9</sup> on the other hand, in a more recent

report cites a case of complete anuria due to bilateral ureteral obstruction which followed the use of sulfapyridine in which he was able to re-establish kidney drainage by ureteral catheterization. In his case (a man, aged 42, who was treated for pneumonia), cystoscopy revealed a protruding concretion from the left ureteral orifice and a gritty sensation on passing catheters into both ureters. The patient made immediate clinical improvement, and the urinary output returned to normal following cystoscopy.

It is possible that anuria may be produced by massive deposition of crystals in the collecting tubules, and in such an event cystoscopic intervention obviously could not bring about the re-establishment of renal drainage. In one of the 4 cases of anuria reported by Brown and his co-workers,<sup>5</sup> the patient died and the autopsy showed deposition of acetylsulfapyridine crystals in the collecting tubules. The authors do not state, however, whether any search was made for impacted concretions in the ureters, especially in their intramural portions.

Acetylsulfapyridine concretions are non-opaque to x-rays, but filling defects in the ureteropelvic tracts either on instrumental or intravenous pyelograms may indicate their presence. The intravenous pyelography may often be inconclusive, as the dye may not be visualized in cases of acute retention on account of temporary renal suppression, the ureters even under normal conditions are frequently not outlined.

### Case Report

L. B., a white man, aged 71, night watchman by occupation, was seen on May 8, 1940. Previous history was irrelevant. He was particularly free from any symptoms of bladder retention. The onset of his present illness was sudden, with severe pain in lower right side of the chest aggravated on deep inspiration, cough, expectoration of greenish sputum, and fever (104.6 F). On examination, dullness, tubular breathing, and some leathery rales were elicited over the lower right side of the chest anteriorly and posteriorly. The pulse was 90 and respiration 34. Sputum examination by the Department of Health revealed type III pneumococcus. The patient received 70 grains of sulfapyridine for the first twenty-four hours and 20 grains more during the following day. The temperature began to drop and his respiration was much improved. On May 11 the patient began to complain of severe pain in the lower right side of the chest, and, because of a friction rub, it was thought to be due to pleuritic involvement. On the following day the patient was relieved of pain but developed an abdominal

# ANURIA DUE TO COMPLETE BILATERAL URETERAL IMPACTION WITH CONCRETIONS FOLLOWING THE USE OF SULFAPYRIDINE IN PNEUMONIA

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THAT sulfapyridine has a marked tendency to crystallize within the upper urinary tract and form concretions has definitely been established both by animal experimentation and clinical reports. Antopol and Robinson<sup>1</sup> found urolith formation in the urinary tract of 24 out of 25 monkeys that were fed on sulfapyridine and had similar results in a series of 150 rats and rabbits with larger doses. Their work showed that the histology and gross pathology depends upon the degree of urinary stasis, and their findings were those of calculous ureteritis, pyelitis, and pyelonephritis in advanced cases. Simultaneously, Gross, Cooper, and Lewis<sup>2</sup> reported similar findings. Mollitor and Robinson<sup>3</sup> found the concretions to be an acetyl derivative of the drug. This acetylation or conjugation probably represents an attempt on the part of the liver to detoxicate it. Marshall<sup>4</sup> states that this detoxification is a failure, and he bases his belief on an experiment in which 7 out of 8 dogs died within forty-eight hours after an intravenous injection of sodium acetylsulfapyridine. Since all of his dogs showed, on necropsy, crystalline deposits in the collecting tubules and stones in the urinary tract, findings which were confirmed in reported autopsies of human cases, we are in complete agreement with Brown, Thornton, and Wilson<sup>5</sup> that death resulted from interference with renal drainage rather than actual tissue damage due to toxicity of the drug.

Clinically, Brown and his co-workers<sup>5</sup> reported a carefully selected and controlled series of 100 cases (of which 94 were pneumonias) in which sulfapyridine was administered. Twenty-six patients in this series developed urinary tract symptoms such as oliguria, anuria, and hematuria. Because of the marked tendency of the conjugated sulfapyridine to form urinary concretions due to its great insolubility, they advocate forcing of fluids and administration of intravenous injections of hypertonic solution of dextrose to prevent supersaturation of urine in cases showing diminution of urinary output and increase of the total and free sulfapyridine concentration in blood.

According to Long and Wood,<sup>6</sup> crystalline deposits of acetylsulfapyridine are found in

the urine of all patients receiving the drug, so that their presence is of no great clinical importance. This observation was corroborated by Brown and his associates.<sup>5</sup> A marked increase in the crystal content of the urine indicates rapid conjugation of the drug, and patients with this finding should be carefully watched.

It would seem to us that the symptoms of bladder irritability and the presence of hematuria are concomitant manifestations of "sand" in the urinary tract analogous to uric acid gravel or well-formed calculi of any other commonly known chemical composition. The experimental and clinical data accumulated in the literature within the period of a little more than a year and the study of our own case point definitely to the fact that hematuria is not a manifestation of toxic nephritis induced by the drug but is the result of local tissue laceration and that it may originate anywhere in the urinary tract.

The acetylsulfapyridine crystals are precipitated from both acid and alkaline urines, and according to Brown<sup>5</sup> the rate of precipitation cannot be altered by administration of alkalis. In our case the pH of right and left urine was 7.5.

Leaving aside such theoretic considerations as the rapidity with which the drug is conjugated, its dosage is an important factor in causation of acetylsulfapyridine uroliths. However, the degree of urinary stasis may greatly depend upon purely local ability of the urinary tract to get rid of accumulated concretions. In Brown's<sup>5</sup> series 22 out of 60 patients who received more than 25 Gm of the drug developed urinary symptoms, which included all of the 4 cases of anuria, while only 4 patients in 40 showed any evidence of urinary tract disturbance when the dosage of the drug was less than 25 Gm. However, in our case of a complete anuria found on cystoscopic investigation to be due to plugging of both ureters with concretions, only 6.5 Gm of the drug had been administered over a period of two days. On the other hand, in the remarkable case cited by Schuffman,<sup>7</sup> the patient received as much as 246 Gm of the drug over a period of sixty-three days, 81 Gm of which were given intra-

prove rapidly. The catheters were washed whenever drainage slowed up to insure against the clogging of their lumens. On removal of catheters considerable grating was elicited only on the left side. Thereafter his urinary output became normal and he was discharged from the hospital on May 19.

### Summary and Conclusions

1. Animal experiments and clinical reports show definitely that sulfapyridine has a marked tendency to crystallize within the urinary tract with formation of acetylsulfapyridine concretions.

2. The recognition of mechanical nature of the interference with urinary drainage in cases of oliguria of complete anuria following the use of the drug is extremely important. Timely ureteral catheter drainage through the cystoscope may be a lifesaving procedure.

3. Hematuria should not be regarded as a manifestation of toxic nephritis induced by the drug. It is due to local tissue laceration and may originate anywhere in the urinary tract.

4. Even a small dosage of sulfapyridine may give rise to complete bilateral obstruction with anuria if local urinary tract conditions favor the retention of crystalline deposits.

5. A case is reported in which anuria resulted from complete plugging of both ureters with concretions following administration of only 6.5 Gm of sulfapyridine for pneumonia. Bilateral ureteral catheterization brought about re-establishment of kidney drainage and complete recovery of the patient.

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### PHYSICAL EXAMINATION OF ARMY RECRUITS

The physical selection and care of the army, a task which always necessitates the most exacting and unremitting work on the part of highly trained men, in time of emergency requires even greater organization and teamwork. Dr. George A. Skinner, Berkeley, California, points out in the October issue of *Hygeia, the Health Magazine*.

"It is still necessary," he declares, "to have an army largely composed of carefully selected, physically fit youth, if it is to operate successfully under all conditions, particularly the unexpected ones that always develop in actual combat." The substitution of older men or of those who are partially incapacitated physically, he says, will not work because such men rapidly break down under stress, requiring at least one man and often two or three to care for each disabled individual. Men who have passed the entrance examination generally resist most of the usual causes of disability.

The examination usually begins by putting the candidates through various exercises to determine whether all joints are normal. "The general examination for hernia, hemorrhoids, condition of the feet, skin and glands may then be made," Dr. Skinner says. "The eyes, ears, nose, throat, teeth, heart, lungs and nervous system are examined individually by specialists in these fields."

"At each point the printed physical examination form which the man keeps with him during the examination is taken by an attendant and a record of observations is made. At any point in the examination, if a question arises, the candidate is referred to a board of specialists for further examination. When all the findings are approximately normal, military clothing is provided for the individual. For this he is

carefully measured, particularly his feet. He is required to stand on each foot while a load approximating his pack is placed on his back. The shoes he is given are larger than those he has been accustomed to wearing, but after he has marched during physical training exercises, he soon realizes the comfort of these more roomy shoes.

"New men are vaccinated as soon as possible against smallpox and typhoid fever. Tetanus (lockjaw) preventive may also be added."

"Military training starts at once and the men are gradually accustomed to physical exercise. Many minor defects exist among accepted men and these are listed for correction by the medical department as rapidly as possible. Personal cleanliness and the care of the feet and teeth must be part of every soldier's training."

"The food supply of the army is most important. One of the duties of the medical department is to inspect food, not only before it is prepared but during the preparation and serving."

"With every group of men, contagious diseases soon appear. This is so predictable that it is often customary to isolate all new arrivals at training centers until a reasonable quarantine period has passed. With the first appearance of symptoms of a contagious disease, the suspect is at once removed to the hospital for further observation."

"It is not easy to keep an army physically fit, but it can be done to an extent that would have been unbelievable to army leaders two generations ago. Disease is now expected to cause less disability than injuries, but this has only been accomplished within the last half century. Previously battle injuries were far less than the disabilities caused by sickness."

distention. He did not void for twenty-four hours, and on catheterization 30 cc of blood-tinged urine was obtained. He developed twitching of the facial muscles and became quite drowsy. The temperature, pulse, and respiration were normal. He vomited on several occasions. On May 13, he continued to be drowsy, vomited several times, and toward evening became very toxic. He failed to pass any urine, and catheterization yielded 45 cc of dark brown urine. On May 14, he continued to be anuric and abdominal distention recurred. The tongue was moist, which indicated that the anuria was probably not due to renal suppression. The chest showed signs of pneumonic resolution on the right side. Considerable tenderness was elicited over the right costovertebral angle, while the left side was but slightly tender. No flatness was elicited over the bladder region, and on catheterization but a few drops of dark bloody urine were obtained. The patient had now been anuric for nearly three days.

Toward evening the patient was removed to Manhattan General Hospital in an ambulance which traveled a distance of nearly 220 city blocks.\* Four and one-half hours after catheterization, before anything else was done for the patient, he voided 7½ ounces of bloody urine. He became very much brighter, and within the next nine hours he passed 59 ounces of urine. On the following morning he suddenly began to complain of severe pain in the right costovertebral angle and developed an abdominal distention. He became completely anuric for the next twenty-eight hours, although he had received two intravenous injections of 50 cc of 50 per cent dextrose solution and 2,370 cc of fluids by mouth. The abdominal distention and drowsiness returned. The blood count showed 80 per cent hemoglobin, 4,400,000 red blood cells, 14,000 white blood cells, of which 84 per cent were polymorphonuclears with 72 per cent segmented cells. The blood chemistry revealed 90.9 mg of glucose, 2.8 mg of creatinine, and 64.2 mg of nonprotein nitrogen per hundred cubic centimeters. The urine voided on the previous day had a specific gravity of 1.015, was alkaline in reaction, had a trace of albumin, and contained numerous red blood cells but no pus cells. The blood pressure was 150 systolic and 90 diastolic. The x-ray showed moderate lateral curvature of the spine but no evidence of calculi in the urinary tract. The silhouettes of both kidneys, because of excessive presence of gas in the intestinal tract, could not be made out.

Cystoscopic examination on May 16, twenty-eight hours after the last passage of urine, revealed the following. Not a drop of urine was obtained through the sheath of the cystoscope.

\* On numerous occasions one of us (R. L. D.) has noted that a severe renal colic due to ureteral stone impaction may ensue following a prolonged automobile ride. This is probably due to the fact that the shaking of the patient may cause a dislodgment of the calculus within a ureter, thus allowing the passage of retained urine.

The bladder mucosa was considerably reddened in the region of the trigon. There was no evidence of vesical neck obstruction which was in conformity with the previous rectal examination that showed no prostatic enlargement. The left ureteral mound was markedly reddened and edematous, and through a minute orifice a grayish white concretion was seen to protrude. The right orifice was also minute but otherwise looked normal. A number 6 Charrière catheter was introduced with difficulty into the left ureter for a distance of 3 cm, when suddenly long ureteral casts of sandlike material began to escape into the bladder alongside the catheter. The latter was slowly worked with to and fro motions into the ureter for another 5 or 6 cm., releasing more of the above casts which broke up into innumerable minute particles within the bladder. With continued difficulty the catheter was finally passed way up to the kidney pelvis, a gritty sensation being elicited. As the eyes of the catheter were undoubtedly clogged in their passage over the sandy impaction in the ureter, no urine was at first obtained, but, as soon as the patency of the catheter lumen was re-established by injection of a few cc of sterile water, clear urine began to drip in a rapid flow, indicating retention. On the right side a similar catheter was passed for a distance of 24 cm before a definite obstruction was encountered. This obstruction was passed by with difficulty. Here again the patency of the catheter lumen had to be restored before clear, watery urine began to escape in a rapid, almost continuous flow. Phenolsulfonphthalein, injected intravenously, appeared at the end of eight minutes in both urines in equal and fair concentration. The segregated specimens of urine showed a pH of 7.5 on both sides, urea—1.2 Gm per one cubic centimeter on the right side and 1 Gm per one cubic centimeter on the left side. The microscopic examination revealed a few red blood cells, but neither pus cells nor microorganisms were found. A few crystals of acetylsulfapyridine were noted in both specimens, and on chemical examination only faint traces of the conjugated drug were found. This was undoubtedly due to the fact that at the time of the cystoscopic examination the patient had conjugated practically all of the drug which had precipitated in both ureters. The cultures showed no growths at the end of forty-eight hours. We were so absorbed in the effort to re-establish kidney drainage that, unfortunately, no attempt was made to recover the concretions that escaped from the left ureter into the bladder for a chemical and microscopic examination. Immediately after ureteral catheterization, pain in the right kidney disappeared. The catheters were allowed to remain indwelling in both ureters for twenty-four hours, and during this time 34 ounces of urine were obtained from the right kidney and 30 ounces from the left, in addition to a few ounces which he voided voluntarily. His general condition began to im-

gen and sugar were normal. Tests for bile pigments in the stool were positive. Brom-sulfalein test (2 mg per Kg) showed a 100 per cent retention at five minutes and a 50 per cent retention at thirty minutes. Blood Wassermann and Kahn tests were negative for syphilis. Roentgenologic examination of the long bones, skull, chest, and pelvis was normal. Visualization studies of the gall-bladder revealed a diminished concentration of dye. No biliary calculi were seen. Duodenal drainage was attempted but was unsuccessful probably because of marked pylorospasm. Further attempts at drainage were refused. Patient was given symptomatic treatment. Surgical intervention was advised but also refused by the patient, and she was discharged on the twenty-fourth day of hospitalization in an essentially unchanged condition.

During the next twenty-three months the patient was hospitalized on five different occasions. Her complaints on these admissions consisted of her usual symptoms which were nausea, right upper quadrant discomfort, dyspepsia, and persistent jaundice. Her stools during this period contained bile pigments. Her fourth admission was complicated by a lobar pneumonia which responded to sulfapyridine.

The findings on physical examination during these periods of hospitalization were essentially similar to those on admission.

During this period of observation much laboratory data were obtained. The serum van den Bergh varied between 2 and 9.5 mg of bilirubin per hundred cubic centimeters with a direct positive reaction. The icteric indices fluctuated between 34 and 53. Stool examinations showed only small amounts of urobilin. Blood cholesterol and cholesterol esters were consistently elevated, the level of the former averaging 480 and the latter 120 mg per hundred cubic centimeters with a ratio of 25 per cent. Numerous urine analyses showed a 4 plus foam test for bile. Hemoglobin remained at about 11.0 Gm per hundred cubic centimeters with a red cell count of 3,000,000 per cmm. A slight leukopenia was present during this period, the white cell count averaging 4,800 per cmm. The differential count was not remarkable except on one occasion when a 12 per cent eosinophilia was found. Examination of one of the orange-yellow plaques removed at biopsy was reported by the pathologist as "a cholesterol granuloma."

*Final Admission*—At this time the patient

was hospitalized because of drowsiness in addition to her usual complaints. During the interim of seven months between her fifth and final admission she also noted progressive increase in the size of her abdomen and slight ankle edema. There were periods during which she noted right upper quadrant pain associated with a spike in temperature usually lasting twenty-four hours. Physical examination revealed no pronounced change in the intensity of her icterus. The patient was semicomatose, rousing only to vigorous stimuli. The orange-yellow plaques of the skin previously noted were still present. The abdomen was moderately distended. There was shifting dullness in both flanks, and a fluid wave was easily elicited. Abdominal paracenteses were performed on two occasions with the release of 1,100 and 2,700 cc of a clear, amber fluid. Following the taps the liver edge could be palpated 10 cm below the costal margin. It was smooth, firm, and somewhat tender. The tip of the spleen was felt 8 cm. below the costal margin.

The patient's course in the hospital was one of gradual decline despite active therapy. Coma appeared on the tenth day and was associated with a sudden rise in temperature to 105 F (40.5 C). Exitus occurred on the same day.

Serum bilirubin during this period was 24 mg per hundred cubic centimeters. The icteric index had risen to 136. The total serum proteins were 6.7 Gm per hundred cubic centimeters consisting of 2.7 Gm of albumin and 4.0 Gm of globulin with an A/G ratio of 0.7. Blood cholesterol, which had been uniformly high previously, dropped to 205 mg per hundred cubic centimeters. The cholesterol esters were 35 mg per hundred cubic centimeters. Examination of the ascitic fluid revealed a specific gravity of 1.010, a total protein content of 1.4 Gm per hundred cubic centimeters and contained bile. Bacteriologic examination of the ascitic fluid was negative for *Bacillus tuberculosis* and bacterial growth. A cell count could not be done because of clotting, but the predominating cells were lymphocytes.

## Discussion

DR. CARL H. GREENE. This is the case of a woman 43 years of age who came to the hospital because of recurrent attacks of jaundice which dated from her adolescence. The early history was rather uncertain, for at one time she said she had her first attack at the age of 17 and on another occasion she said it was at the

# Diagnosis

THIS new JOURNAL section will carry case reports that have been made the subject of discussion from the point of view of the diagnostic process needed and the post-mortem evidence. All the cases will be selected because of some unusual interest. Two hospitals in this city have very kindly offered to supply this material, each six times a year. Reports from the New York Post-Graduate Hospital will alternate with reports from Bellevue Hospital, Fourth Medical Division. These reports form a companion piece to the Cornell Medical College Conferences on Therapeutics.—Editor

## CLINICOPATHOLOGICAL CONFERENCES DEPARTMENTS OF MEDICINE AND PATHOLOGY

NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL, COLUMBIA UNIVERSITY

Date November 19, 1940  
Presiding Dr Irving S Wright

### History

DR ROBERT McGRATH This patient was treated in the dispensary and wards over a period of twenty-three months. During this time there were six hospital admissions.

*First Admission*—A 43-year-old, white American woman entered the hospital for the first time complaining of vomiting of one week's duration and of jaundice which had been present constantly for two years. She previously had jaundice for about one month sometime between 12 and 17 years of age but was unable to give further details concerning any associated symptoms. At the age of 29 she was told she had syphilis and was given about nine intravenous treatments of an unknown drug with no untoward reactions. After this time all serologic tests for syphilis were negative. At 30 years of age she had an attack of severe right upper quadrant pain with fever and jaundice which passed off in several days. At 37 she had a similar illness but had jaundice for six months. During this episode, she was admitted to Hospital A where operation was advised but refused. A letter from Hospital A gave the following significant data: icteric index 65, blood Wassermann negative, stools were light colored but not acholic, and x-ray examination of the chest and long bones was normal. No abdominal x-ray studies were made. When 41 years of age, the patient experienced a similar attack from which she never made a complete recovery. Her icterus persisted and deepened. There was a weight loss of 77 pounds over a period of one year, associated with asthenia and anorexia, her usual weight being 197 lbs. She also noted the development of "yellowish spots" in her skin located

particularly on the eyelids and fingers but to some extent over the entire body. At this time she entered Hospital B for observation where she was told that surgical intervention should not be done and was discharged in a relatively unchanged condition. Significant laboratory data obtained from this institution was the finding of an elevated icteric index and a blood cholesterol of 725 mg per hundred cubic centimeters.

Family history was of interest—her mother died at the age of 70 with jaundice of unknown origin and her father died of tuberculosis at 43.

Physical examination showed an emaciated woman whose skin was colored a peculiar dark grayish yellow. There were slightly elevated orange-yellow plaques in the skin of the eyelids, elbows, knees, and body. Examination of the neck, chest, and heart was normal. A small epigastric hernia was found. The liver edge was felt 10 cm below the costal margin. It was firm, nontender, and smooth. The lower margin of the spleen was palpated 3 cm below the costal margin. No other masses were felt.

Urinalysis showed a plus protein and a 4 plus foam test for bile. The hemoglobin was 11.0 Gm per hundred cubic centimeters with a red cell count of 3,200,000 per cubic millimeter. The reticulocyte count and fragility of the red blood cells were within normal limits. Platelets numbered 84,000 per cubic millimeter. The white cell count and differential were normal. Bleeding and clotting time were within the normal range. The serum van den Bergh was 8.8 mg of bilirubin per hundred cubic centimeters, with a direct, positive reaction. The icteric index was 83. The findings for blood cholesterol and cholesterol esters were 450 and 125 mg per hundred cubic centimeters, respectively, with a ratio of 37 per cent. Blood nonprotein nitro-

with obstructive jaundice due to constriction of the common duct whether inflammatory or neoplastic in origin. Montgomery believes that the etiology of neoplastic or systemic xanthomatosis remains to be determined and that no one theory satisfactorily explains all the different forms.

I am personally in accord with Montgomery's view. Many patients with cutaneous xanthomata show no change in the blood cholesterol levels. It has been recognized that increased blood cholesterol in diabetes mellitus may or may not be associated with an active lipemia and that there is no direct relationship between the level of the blood cholesterol and cutaneous xanthomatosis. The most striking illustrations of cutaneous xanthomatosis are seen in the medical textbooks of half a century ago. Such books as J. Wickham Legg's<sup>3</sup> have illustrated examples of extensive cutaneous xanthomatosis associated with gallstones. It is my belief that the surgeons are the cause of the infrequency of these cases at the present time. The average patient with jaundice is operated on early, and so it is only occasionally (as in the present instance) that cases of long continued obstructive jaundice are seen. These latter are very apt to show hypercholesterolemia independent of the nature of the obstructing lesion.

The diagnosis in this patient would have been made more certain if it had been possible to do a satisfactory duodenal drainage in order to examine the bile for crystals and bacterial flora. In our experience the finding of *Bacillus coli* and of calcium bilirubinate crystals in the duodenal drainage is usually pathognomonic of stone in the common duct.<sup>4</sup> Enlargement of the spleen is not commonly seen in the early stages of obstructive jaundice, but, when obstruction has lasted sufficiently long, the development of a secondary obstructive fibrosis occurs (obstructive biliary cirrhosis) and splenomegaly then develops.

My final clinical diagnosis is chronic cholecystitis with stones, probable stone in the common duct, obstructive biliary fibrosis with secondary congestive splenomegaly, generalized xanthomatosis, and hepatic insufficiency.

**DR WRIGHT:** Dr. Greene, do you believe that there is such a syndrome as primary xanthomatosis? If not, how do you explain

the small xanthomatous plaques frequently seen on the eyelids of patients with no evidence of biliary pathology? Should these plaques be considered a definite indication for a complete liver and gallbladder study when unaccompanied by other signs or symptoms?

**DR GREENE:** Yes. I do think that there is a syndrome as primary xanthomatosis. The mere presence of xanthomatous plaques is not adequate indication for a complete liver and gallbladder study. The patient should exhibit symptoms referable to these systems in order to warrant such an investigation.

### Clinical Impressions

Primary disseminated xanthomatosis or chronic cholecystitis with cholelithiasis and obstruction to common bile duct with secondary xanthomatosis.

Biliary cirrhosis

### Dr. Greene's Diagnosis

Chronic cholecystitis with stones

Probable common duct stone

Obstructive biliary fibrosis with secondary congestive splenomegaly

Generalized xanthomatosis

Hepatic insufficiency

### Pathology

**DR MAURICE N. RICHTER:** The lesions of principal interest are in the biliary system. The liver is enlarged, weighing 2,000 Gm. It is deeply jaundiced and presents the picture of biliary cirrhosis. The gallbladder is contracted and scarred and communicates almost directly with the common bile duct. Nine calculi are found in the gallbladder. Although no stones are found in the common duct, obstruction has evidently been present, for the common and hepatic ducts are dilated and their mucosae are bile-stained.

The spleen weighs 925 Gm. and is soft and flabby.

Microscopically the liver lesion is that of biliary cirrhosis. Bile pigment is found in both liver and Kupfer cells, especially in the region of the efferent veins. A slight increase in number of bile ducts and an occasional vacuolated cell is noted in the portal areas. Practically no lipid is demonstrable with Sudan IV or osmic acid, and examination of frozen sections with polarized light shows no anisotropic material. No xanthomata are seen in the liver or in the extrahepatic bile ducts. The skin lesions, however, are typical xanthomata with cholesterol deposits.

The spleen shows moderate diffuse fibrosis,

<sup>3</sup> Legg, J. Wickham. *On the Bile Jaundice and Biliary Diseases*. New York, Appleton and Company, 1880.

<sup>4</sup> Carter, R. F., Greene, Carl H., and Twiss, J. R. *Diagnosis and Management of Diseases of the Biliary Tract*, Lea and Febiger Philadelphia, 1939.

age of 12. She had had four major attacks prior to her first admission to the New York Post-Graduate Hospital. Several of these were associated with fever and jaundice. These attacks were sufficiently severe so that a diagnosis of acute cholecystitis with stones was made at another hospital. Following the early attacks the jaundice cleared up, and she was well during the interval. The jaundice persisted for two years prior to her final admission to the hospital. After a year of jaundice she was studied in a third hospital when chemical studies showed a blood cholesterol of 725 mg per hundred cubic centimeters. This figure was outstanding since the normal blood cholesterol usually varies between 180 and 230 mg per hundred cubic centimeters. The highest blood cholesterol that has been found in the laboratories of the New York Post-Graduate Hospital is 2,100 mg per hundred cubic centimeters. This was in a patient who had an acute pancreatitis, diabetes mellitus, and xanthomatosis. In the present patient the reading of the blood cholesterol, therefore, is significant because of its elevation, but it is by no means exceptional.

The physical examination on admission revealed a large firm liver, a large spleen, and jaundice. The appearance of the skin was noteworthy, because in addition to the yellow color of jaundice she showed the generalized deposition of melanin pigment that is so often associated with long standing chronic jaundice. In her case the skin color seemed to be due to a combination of bilirubin and melanin (black jaundice) without any marked greenish component. This darkening of the skin further accentuated the striking appearance of the xanthomatous spots around the eyes, fingers, knees, and other places on the body.

Because of the history of recurrent attacks of upper abdominal colic associated with fever and jaundice, a preliminary diagnosis of chronic cholecystitis with stone and a probable stone in the common duct was made. Operation was advised but refused by the patient.

Other causes of jaundice were taken into consideration in the differential diagnosis. Because of the early age of onset (12 years?), the large spleen, and the history of jaundice in the mother at the time of her death, familial hemolytic jaundice was considered. It was felt, however, that this could be eliminated completely. In the first place the development of jaundice in the mother at the age of 70 was a strong argument against the familial

type. This patient's freedom from jaundice during early childhood, the normal character of the erythrocytes, and the absence of reticulocytosis and spherocytosis would seem to exclude hemolytic jaundice, although it must be recognized that a considerable proportion of patients with congenital hemolytic jaundice develop gallstones. When a patient has obstructive jaundice superimposed on a hemolytic jaundice the laboratory findings cease to be characteristic of the latter.

Biliary cirrhosis or chronic hepatitis was considered in the differential diagnosis, particularly in view of the story of antisyphilitic treatment at 29 years of age. This was discounted because of the first attack of jaundice possibly antedating puberty, and there was no history of continued exposure to alcohol or other hepatotoxic material. It is not unusual for a case of cirrhosis to have such a prolonged history with recurring exacerbations such as was reported in this case.

When this patient was first admitted to the New York Post-Graduate Hospital she was demonstrated before the medical conference as a possible case of generalized xanthomatosis with associated biliary cirrhosis of the type described by Thannhauser and Magendantz.<sup>1</sup> In their article Thannhauser and Magendantz describe in detail the various clinical pictures presented by disturbances in function of the reticulo-endothelial system such as Gaucher's disease with the deposition of sphingomyelin in the foam cells of the reticulo-endothelial system. These authors explain xanthomatosis on the basis of the active production of various lipoids in foci of xanthoma cells in the body. Thus, the condition of systemic xanthomatosis can be looked on as a primary disturbance of lipid metabolism. It is further explained that biliary cirrhosis is secondary to destruction of the finer radicals of the bile ducts by deposits of cholesterol in their walls. These latter are similar to the deposits of cholesterol in the wall of the gall bladder in cases of cholesterosis or so-called "strawberry gallbladder." This view of Thannhauser and Magendantz has not been generally accepted, and Montgomery<sup>2</sup> takes exception to the view that generalized xanthomatosis represents a primary disturbance in cholesterol metabolism. He agrees that xanthomatosis is sometimes seen in association with hepatic disease, but he points out that this is particularly so in association of cases

<sup>1</sup> Thannhauser, S. J. and Magendantz, H. *Ann. Int. Med.* 11: 1662 (1938).

<sup>2</sup> Montgomery, H. *Ann. Int. Med.* 13: 671 (1939).

## *Special Article*

### A STUDY OF COUNTY SOCIETY ACTIVITIES

JOSEPH S. LAWRENCE, M.D., Albany, New York

THE County Medical Society is the unit of organized medicine. This being true, it is most desirable that the members of such society should realize the necessity of keeping it a strong, active component of the larger state organization.

In New York State there is an active society in every county but one. That county is Hamilton, in the Adirondack Mountains, and its limited population is located in a few small centers or near to its boundary so that adequate medical care is provided by a few resident physicians (too few to organize a society), and others residing near the border of neighboring counties.

The sixty-one county societies range in membership from eleven physicians in Schuylar County to approximately five thousand in New York County. Twenty-four societies have fifty or fewer members and another eighteen range between fifty-one and one hundred. Three have more than one thousand members. In some of the rural counties 100 per cent of the physicians are members of the society, while in some of the densely populated counties the proportion of members is as low as 60 per cent. Physicians locating in rural counties usually seek membership in the county society as early as possible after registration of their licenses and location of offices. Membership is sought not only for scientific advantages and fraternal associations but to establish a reputation for merit and regularity and also to benefit from the protection the society provides against charges of malpractice.

A society's efficiency will depend, in part at least, upon the number of times it convenes. When the prime objective of a meeting of the society was to hear a scientific address and join in the discussion, it was no serious matter if the meetings were not held regularly or if the interim between meetings was great, but today the society has important business obligations and must, therefore, meet frequently and regularly. If the secretary of a society that meets but twice a year receives a letter shortly after the meeting, he will not be able to get the society's consideration of it for six months, and

by that time action may be too late. Eleven societies have but two regular meetings annually, another twenty-two meet four times a year. Twenty-one meet eight or more times, two of these meet monthly throughout the year. It would seem that all societies should try to meet at least six times a year for the purpose of transacting business. Of course, if there is exceedingly urgent business to be transacted, a special meeting is called. Some societies hold a short business session in connection with the lectures when they are having one of the postgraduate courses, others may have a majority of members on the staff of a certain hospital and take advantage of a clinical conference day to have a special meeting. Too few take as seriously as it deserves the business part of their meetings, i.e., the consideration of communications, of committee reports, and of the reports of their delegates to meetings or committee conferences of the State Society. Some of the societies endeavor to transact their business in the half hour before the time set for the scientific session, and, if a quorum does not arrive or there is too much business for that time, the meeting is adjourned until after the scientific session closes, when another desperate effort is made to secure a quorum. Of course, where the county society has a *comitia minora* authorized to do certain business, there is need only for the acceptance of its report with the transaction of such business as it requests in the general business meeting.

In recent years societies are devoting more time to the discussion of problems arising out of changing social conditions. Occasionally, a society will devote an entire meeting to a discussion of problems incident to medical care of indigent sick, practice under the Workmen's Compensation Law, or medical preparedness.

Most societies do not have established headquarters where mail can be received and records kept. The only permanent records preserved under such conditions are the secretary's minute book and the treasurer's receipt book. The places where meetings are usually held are club houses, hotels, and

presumably from portal congestion. This picture is modified by an acute splenic tumor and by the presence of occasional foci of developing blood cells. No "xanthoma cells" are seen.

It is our interpretation that these findings indicate biliary cirrhosis from common duct obstruction and that this obstruction was due to calculi and not to xanthomata in the biliary system. On this basis the hypercholesterolemia and the xanthomata in the skin are the result, rather than the cause, of the obstructive lesion.

DR WRIGHT: I should like to ask Dr Richter whether he thinks there is such a thing as biliary cirrhosis due to obstruction by xanthomata in the bile ducts.

DR RICHTER: I have not seen it. In the present instance this was not the case.

### Pathological Diagnosis

Chronic cholecystitis  
Cholelithiasis (calculi in gallbladder)  
Biliary cirrhosis  
Icterus  
Ascites  
Splenomegaly due to portal congestion  
Xanthomatosis of the skin

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### A LEGAL KINK IN MEDICAL CARE FOR REFUGEE CHILDREN

A physician in an Ohio community was called to attend a small child who had been brought to this country from England for placement in an American home to escape the dangers of war, and, as reported in the *J. A. M. A.*, he found that the child was suffering from badly diseased tonsils and adenoids. He recommended an operation but was advised that the surgical procedures contemplated could not be undertaken lawfully until consent was obtained from the child's parents in England. As more and more European children are placed in American homes the problem that confronted this physician will necessarily constantly recur. Any unnecessary delay in providing medical care for the children would be most unfortunate. The United States Committee for the Care of European Children, in which now centers the responsibility of securing American homes for the young refugees, has given this matter of authorization of medical care considerable thought. The committee realizes the importance of the matter and is working on a plan to effect a definite solution to the problem. Pending the completion of this plan, however, the committee thus expresses the view that there need not now be any such delay as was suggested to the Ohio physician.

"Pending a more permanent arrangement, the United States Committee and any foster parents, however, are not left completely remediless. We feel that there is a degree of factual background which would enable a foster parent, on

the basis of general American law, to consider himself as acting in loco parentis. Among such factors are that the English parents of their own volition sent their child to an American home and assumed all the risks inherent therein, that the American foster parents have taken the child into their home, have supported it, have cared for it, and generally have exercised custodial powers over it. Certainly, it would seem such foster parents could exercise their rights over the child as against any other individuals, with the exception of the child's actual parents. Bearing such factors in mind it would appear likely that American courts would hold that the American foster parent, having assumed all these rights, duties, and obligations, would likewise have the power to consent to any necessary medical or surgical treatment of the child.

"We feel that there are also two further mitigating circumstances. In the first place it is highly unlikely that the question would ever be raised except by the English parents themselves and it is extremely doubtful, in view of all the circumstances, that they would complain. In the second place, we feel that an American court would be reluctant to hold the United States Committee or the foster parents liable for such a given consent when the whole picture of this emergency child care movement was adequately and forcefully presented. If, on the other hand, the foster parents were negligent in handling the matter they should be held liable."

### SIGHT FOR SORE EYES

A number of years ago an elderly colored woman presented herself at my clinic with a cataract, relates an Iowa doctor in *Modern Medicine*. I operated and after about ten days she was ready to go home. I decided I would see how much vision the old lady had, following the removal of the cataract. I put a trial frame with some lenses in my pocket and went to the hospital. I said to my nurse, "Come with me and we will see how much vision our patient has."

We went to the ward and the nurse removed the bandage while I slipped the trial frame in place and dropped in the lenses that would give her approximate correction. I said, "Now, Auntie, what can you see?"

She twisted her head around until she got the proper focus and then said, "Well, doctah, I sees that you ah a pow'ful han'som man." The nurse took all the joy out of the remark by saying, "She can see better than I can."

## Expenditures

One and only one item of expense is common to all societies and that is the cost of preparing and mailing notices of the meetings. The next most common expense is for secretarial and stenographic services. It is often said that an organization will be active or lethargic depending upon the interest of its secretary. There is much reason to believe that the saying holds true with medical societies. Secretaries usually take great pride in their duties and submit to re-election so long as their health permits them to do the work. Several have served more than fifty years. Many of those with long years of service have never received anything for their loyalty but a vote of thanks. Seventeen societies do not compensate their secretaries in a material way, twelve allow them amounts ranging from an uncertain sum to \$100 for the payment of necessary clerical assistance. Six remit the dues of their secretaries, fourteen grant an honorarium of \$10 to \$50 annually, and seven others grant amounts varying from \$100 to \$250.

Four societies that do not compensate their elected secretaries employ executive secretaries to be their assistants and to devote their whole time to the work. One society employs its elected secretary as its executive secretary on part time.

This study has convinced the writer that the time has come when a society secretary must be able and willing to devote more than a few spare minutes to his duties if the society is to retain its importance and live up to its responsibilities as a component of a large, influential State Society. A busy practitioner should not be expected to do this work without some compensation for the time and service he must provide. Obviously not all societies can afford nor will their needs require the full time of an executive secretary, but all societies, no matter how small, will and do require an increasing amount of time of one of their members to keep the minutes of the meetings and the records, to supervise matters relating to workmen's compensation, to coordinate the duties and stimulate the activities of the several committees, to arrange for postgraduate education, and in many ways to represent his society with local, state, and national organizations.

The secretary continuing in service from administration to administration becomes known as the representative of the society through whom all inquiries or suggestions for

society activity will pass. Of course, the society has committees appointed to function for it in their respective fields, but often the secretary must function for them. In twenty-six counties the secretary serves as treasurer also, and seven of these secretaries are among those receiving no financial assistance from their societies.

The treasurer is another officer who is re-elected as often as he consents to accept the honor. In twenty-six societies, as was stated before, the secretary functions also as the treasurer. Only ten of the other thirty-five treasurers receive compensation, two, an uncertain honorarium, two, remission of dues, four, \$50, one, \$100, and another, \$300.

## Delegates to State Society

Twenty-four societies refund in full to their delegates to the meeting of the House of Delegates the actual expenses incurred in making the trip. Of the others, one society refunds \$15 to each delegate, while five others refund up to \$25 and one to \$35. One society refunds the railroad fare and compensates each delegate \$10 per day. Five refund the railroad fare only, while four refund railroad fare and hotel expenses. Twenty require that the delegate meet all of his expenses himself. They feel that a member should be willing to make that contribution for the honor of representing his society. Sometimes members refuse the honor and representation depends upon the willingness of a member expecting to attend the scientific meeting to be the delegate.

The meeting of the House of Delegates is the most important affair in the annual experience of the State Society, and every county society should be keenly interested in its transactions and, therefore, have able representation. A delegate should be familiar with the State Society's program and be prepared to give the meeting the benefit of his county society's attitude or experience.

## Honoraria

Inquiry was made regarding compensation of guest speakers at county society meetings. More than half (thirty-seven societies) replied that they offer to repay their expenses or make them an honorarium. Twenty replied that it is not their practice to do anything, and four others said they do so occasionally. A few years ago large clinics and hospitals would meet the expenses of members of their staffs who accepted invitations to take

hospitals At least five societies (Erie, Kings, Monroe, New York, and Queens) have offices and facilities for holding their meetings in the same buildings Where facilities for preserving records are inadequate, the responsibility for the continuance and efficiency of the society rests largely on the secretary He is elected for a term of one year, but almost without exception he will be re-elected annually as long as he will accept the honor and task The president is elected for a term of one year, also, but is rarely re-elected The treasurer and delegates to the House of Delegates of the State Society are usually re-elected in two or more years Where the society meets but twice a year, the president has very little opportunity to render much service He is elected in October, and unless he prepared himself in advance he will not be in a position to declare his program or appoint the chairmen to his committees at once He is likely to take his time, for the next meeting will not be until May Thus, the active part of his year may pass before he has completed his organization, and by that time vacations are at hand and society affairs are reduced to a minimum He will probably endeavor to have the coming October meeting worthwhile, but it will be unbecoming for him to prepare a program for further activity since his term of office expires Even where it is the custom to advance the vice-president, it is not likely to be different Officers should be chosen who are qualified and willing to contribute actively both in time and effort

Attendance of members at meetings is the bugbear of all active officers It is affected by many conditions and circumstances A good program, including a live subject or a prominent speaker and, better still, a combination of the two, usually results in a good attendance The weather, the place of meeting, and the hour, all influence the attendance In the rural districts the best attendance is secured when the meeting includes a meal For example, the business portion of the program may be held before luncheon and the scientific in the afternoon, or the program may be built in like manner about dinner in the evening In the cities, discontinuance of a collation after the evening meeting will be followed by a marked decrease in attendance

Attendance is not influenced greatly by the size of the membership unless the effect is in adverse ratio Rural county societies may have 80 or 90 per cent of their members in attendance, while the larger urban societies may have at times relatively small meetings

Many societies have one meeting a year which is principally a social affair It may be a clambake, a beefsteak supper, a summer outing, or a joint meeting with the lawyers, the dentists, or the auxiliary Such meetings are usually very worthwhile and well attended

The annual meeting when officers are elected is usually a dinner meeting among the smaller societies, and occasionally the members are invited to bring their wives A few societies divide their annual meeting into two parts—business on one evening and the banquet another evening

### Incomes

Dues, exclusive of State Society dues, assessed annually by county societies vary in amount from \$1 00 to \$25 (see Appendix) Twenty county societies assess themselves \$2 00 annually, while twenty-two collect \$5 00 Four societies collect \$10, one, \$20, and three have sliding scales ranging from \$10 to \$25 in two societies and from \$12 50 to \$25 in the third In these three societies physicians who are just starting to practice are favored with the lower dues One society has no regular annual dues but assesses its members \$5 00 whenever it is necessary It reports that there has been one such assessment in the last four years Most societies have no other income than that received from dues There are, however, other sources—eight societies collect a fee for registering the members under the Workmen's Compensation Law, four collect dues from associate members, four have endowments or moneys at interest, three realize a profit on their bulletins, and two collect an initiation fee Other sources of income reported are use of society building by other groups, radio talks, refraction of eyes of children for city, clinics, and school health service

It is interesting to note that the county societies collect annually in dues, exclusive of the State Society assessment, a total of more than \$210,000 Only one society reported having an endowment It is the gift of a former member who was president of both the county society and State Society One wonders why more societies should not have endowments

One might speculate as to why there should be such a great difference in the amount of dues collected by the different societies It is evident that they collect dues in keeping with their activities

gathers the information for the bulletins. He also represents the profession at public hearings.

Copies of the printed bills discussed in the bulletins are sent to the chairmen of all county society legislative committees, and they are asked to give the State Committee the opinion of their committees at the earliest opportunity. In spite of the elaborate efforts made to secure expressions of opinions and with the assurance that these comments help the State Committee arrive at a decision as to whether a bill should be approved or opposed, the number of replies received is often disappointing.

About a month after the legislature has convened the chairmen of the county society legislative committees are invited to a conference in Albany, at which time the bills that have been introduced are carefully studied and discussed and a decision is reached upon each. These conferences are considered very worthwhile by the State Society and the chairmen who attend. Although the State Society refunds to each chairman the expenses incurred in attending the conference, only about one-half of the county societies have been represented at any particular conference. Of course, it is understood that all chairmen cannot leave their practice on a particular day—and for those farthest from Albany two days—but probably some chairmen do not take their responsibility as seriously as the position deserves. During 1940 we did not have a communication from thirteen of the sixty-one county chairmen nor from any member of their committees. There were eleven other county chairmen of committees from whom we did not hear, although some member of each of those committees did send us some comment. Only six of these twenty-four chairmen attended the annual conference. It is possible that some of these chairmen modestly thought that their comments were not needed, for we know that some of them did keep in close touch with their legislators. This seeming lack of cooperation was not always the fault of the chairmen, for to our knowledge some were not appointed or notified of their appointment until January. It is possible, also, that some chairmen hesitate to express an opinion that would be interpreted as the position of their societies without having instructions. They are unable to secure these instructions because their societies do not meet again until after the legislature has adjourned. These chairmen should consult with the other members of their

committees—a practice too frequently neglected.

Another important committee is the public health committee. Forty-eight societies have such a committee. In a few instances it also takes on the function of arranging for the postgraduate lectures. Many of the committees report very little activity, but in several of the larger societies this is the most active committee and accomplishes annually a vast amount of work in its community, either directly or indirectly through lay groups with which it affiliates. As an answer to the query as to whether the society takes a share in community group activities, forty-four reported that they do. Fifteen reported that they take no special interest in community affairs, since there are sufficient lay groups for the work. Two did not answer. The cooperation is generally conducted through the president and secretary of the society and appropriate committee chairmen. Eleven societies give the responsibility to the committee chairmen alone, while six make their contacts through the secretary of the society. In some societies this committee is combined with the committee on public relations. Thirty-five county societies, however, report having a separate committee on public relations. In eleven societies public relations and medical economics are combined, and in thirty-three societies medical economics is a separate committee. Forty-one societies have committees on workmen's compensation, and only ten have a public welfare committee.

The most important problem of both economics and compensation which presents itself to all societies throughout the state is that of proper and adequate medical care for the indigent. The state and federal governments are morally and financially interested in developing satisfactory working programs for the care of the aged, the indigent, and the fatherless child, and our county societies should all have committees actively working with the local authorities who are responsible for the administration of the laws regulating the work. The public authorities confess that they cannot satisfactorily administer the laws without advice and assistance from physicians.

Twenty-three societies have committees on maternity, infancy, and child hygiene, and twenty have cancer committees. Fifteen have program committees and thirteen have committees on membership. Eight have publicity committees, while five have committees on entertainment and arrangements.

part in county society programs, but they are no longer so liberal. Frequently a man who has mutually pleasant relations with the members of a county society will accept an invitation and expect no remuneration. Members of medical school faculties are still willing to assist societies in the vicinity of the schools. State employees can accept invitations and classify them among their duties, in which case the state will meet their expenses.

### Other Expenditures

At least one-fourth of the societies provide a dinner at the time of the annual meeting with no extra charge to the members. All purchase floral pieces for their dead. Some honor their members with some significant gift on the completion of fifty years of practice.

A number of societies hold membership in one or more of the following organizations: Chamber of Commerce, Better Business Bureau, Tuberculosis Association, Council of Social Agencies, and Cancer Committee. Some make contributions to the Boy Scouts, Red Cross, Salvation Army, and Community Chest. Other items of expense mentioned by at least one society are auditing, interest, rent, insurance, library, social security, telephone and telegraph, bulletins, essay contest, broadcasts, projection lantern, travel, and collations. Six societies contribute from \$10 to \$25 to the Physicians' Home.

### Committees

The most important committee of the societies is the *comitia minora*. All but a few of the smaller societies have a *comitia minora*. It is generally composed of the officers and censors and sometimes the chairmen of the standing committees, but occasionally some of its members are elected by the society to that one office only. Its functions are usually those of an executive committee and a board of trustees. It devises or passes upon all plans or programs of activity of the society. It usually supervises the expenditure of money and makes recommendations of administration to the society. Its time of meeting is generally within the week prior to the regular meeting of the society.

Every society has a legislative committee. In one of the large societies the committee has fifty members, while in some of the smaller societies the committee is but one person. From many aspects this is the most important committee of a society's organization. Annually, scores of bills are brought before the

legislature which, if enacted into law, would endanger the public health, interfere with the scientific practice of medicine, or compel our educational authorities to lower the enviable high standards of which New York State is so proud. It is well known that vicious proposals are often promoted by large, powerful groups and interests and not infrequently championed by intellectual and influential citizens. It, therefore, behooves every society (regardless of its size, rural or urban) to be responsible for bringing promptly to the attention of its legislators and other political leaders correct information on each such measure. The legislative committee is given this responsibility, and its personnel should be selected in a manner to make it most efficient. The chairman should be able and willing to give the time necessary to read and study the bills as they come before the legislature. He should be familiar with the political organizations of the county, and his efficiency will be greatly increased and his task lightened if he is personally acquainted with the legislators and political leaders. In the larger societies he cannot expect to know all of the leaders, and so he must delegate some of this responsibility to other members of his committee. Some societies compose their committees by selecting a physician from each legislative district of the county and giving him the personal responsibility of keeping in touch with that legislator. He is expected to enlist the aid of other physicians and influential public personages of the district when he feels their need.

It is now generally recognized by all societies that the most effective method of informing the legislators is not by the physicians sending mass telegrams or letters to everybody in the legislature or by appearing at the Capitol seeking to be heard on the relative merits and demerits of proposed legislation. Representatives of each society should discuss the important matters with their legislators when they are home over week-ends.

In order that the county society representatives may be familiar with pending legislation, the Legislative Committee of the State Society sends bulletins to each member of every county society legislative committee (weekly or more frequently if thought necessary) describing all bills relating to public health or the practice of medicine as they are introduced. These bulletins continue to report what action is taken upon the bills. The Executive Officer of the State Society calls upon the legislators in the Capitol and

were held Last year (1940) the conference was postponed because the secretaries had been called to Albany in July by the State Committee on Medical Preparedness Five county societies were represented by their secretaries at each of the nine conferences and three others by either the secretary or a substitute Six others were not represented at any one of the nine conferences either by their secretaries or substitutes Six were represented by their secretaries or substitutes at only one of the nine conferences (see Appendix)

Likewise, the State Committee on Legislation annually calls a conference in Albany in early February of the chairmen of the county society committees The object of the meeting is to study the bills that have been introduced in the legislature up to that time and decide whether to support or oppose them. At this time plans for continuance of the work through the session are formulated In the last ten years eight such conferences were held, one year there was no conference, and regional conferences were substituted as an experiment in one year Six societies have been represented at each of the eight conferences by their chairmen or appointed substitutes, and five were not represented at any Among the five are two societies whose secretaries were absent from all the secretaries' conferences as well Eight were represented at just one conference, six by the chairmen and two by substitutes (see Appendix)

The county society presidents have no opportunity to attend a statewide conference, but they meet in groups when they are invited to the conferences of the executive committees of the district branches Since the presidents serve but one term they cannot profit by acquaintance to the same degree as the secretaries or legislative chairmen who usually serve a number of years

Considering the observations in this study, it would seem that the medical profession is not so thoroughly organized in this state as it should be Spiritually and scientifically we are of one mind No society, regardless of its size or geographic location, will tolerate any violation or disregardance of the Code of Ethics, nor will it willingly or knowingly permit or contribute to any form of practice of medicine that does not promote and protect the public health The efficiency of these autonomous units can be increased by the State Society taking a more lively interest in the activities of the county societies The county society should retain its autonomy

and continue to be responsible for the medical activities within its boundaries, but many problems and situations arise in the administration of the Education, Health, and Welfare Laws that extend beyond the county and may be state-wide With such problems the best results are obtained by cooperation with the State Society Our respective standing committees do confer with representatives of the State Departments for the purpose of developing programs, but the methods of bringing a knowledge of the results of their deliberations to the county societies are faulty and ineffective Close cooperation between all of the county societies and Council committees so engaged is highly imperative, for the defection of a single society may be fatal to a desirable program As an example, the press announces that a member of the board of supervisors in a nearby county moved to reconsider its previous action in authorizing the appointment of a medical consultant to the welfare officer because members of the county medical society resented the appointment He said "They claim that nothing can be gained through the appointment of a medical consultant" The appointment of a medical consultant to assist the welfare officer is a recommendation of the Council Committee on Public Relations after two years' study of the Welfare Law and frequent consultations with representatives of the State Department of Social Welfare

Only by close cooperation among the county societies themselves and with the State Society can the physician members exert their greatest influence in public service The rapidly changing social relations and the threat of war demand that the medical profession join with other public agencies in defending our scientific achievements We have an unequalled opportunity to manifest our leadership by uniting to achieve the eight-point program of the American Medical Association, which is also our program, and to provide adequate medical care while many of our profession are in training camps If we neglect this opportunity for leadership, it will be assumed by lay and governmental agencies Since our leadership must depend upon the solidity of our organization, the following suggestions are offered (1) closer contact between state and all county societies, (2) full realization that problems of medical care and medical legislation are *fundamentally* the same in all counties, whether large or small, (3) free interchange of experiences among county societies and

The following are other committees mentioned, with the number of times they occur: advisory, 7, advisory to woman's auxiliary, 6, hearing, 2, hospital, 5, hospital insurance, 2, library, 4, medical indemnity, 3, milk, 3, nursing, 2, obituary, 4, physical therapy, 3, and speakers, 2. The following were mentioned once: auditing, grievance, illegal practice, journal management, laboratory, liaison, loan, nurse registry, ophthalmia, personal property, publications, public safety, radiology, relief fund, research, resolutions, scientific, T.E.R.A., visiting, and ways and means.

At the request of the State Committee on Medical Preparedness each county society has designated a special committee for that work.

### Other Society Activities

Twenty-eight societies reported they have had one or more of the postgraduate courses of lectures and twenty-two have not had any. Eleven did not answer the question. The State Committee on Public Health and Education has reported elsewhere very fully on this activity.

A few years ago the Committee on Legislation recommended to the county societies that they invite the members of the local bar association to a joint meeting where matters of mutual interest might be discussed. Nineteen report that they have had such a joint meeting. Where there was no bar association they invited the district attorney, county judge, and other attorneys. Almost without exception the meeting was the occasion for a banquet. Now in some counties the physicians and attorneys take turns in acting as host annually. It has been observed that even one such affair has left a better feeling of mutual regard among those who were present. Nineteen societies have not had a joint meeting with the attorneys, and thirteen did not answer the question. Every society should make at least one effort to promote a spirit of good fellowship with associates in other professions in the community.

Eight societies employ executive secretaries and do not believe they could carry on their program without one. Forty-six have not considered having one because they think themselves too small to bear the expense and because they do not feel the need for one. Seven have considered the matter but fear the expense involved is too great. Twenty-nine would not consider employing one jointly with some other agency, while twenty-four are willing to consider such a proposition,

but sixteen of them doubt that there would be any advantage to the society.

These are not entirely unexpected reactions. Those larger societies that are meeting frequently and taking an interest in what their committees are doing are finding it increasingly difficult to secure a secretary who can contribute gratuitously the time required to attend meetings and conferences and send out notices to and for committees. It is very obvious that some societies are too small to bear alone the expense that would be involved in the employment of a full-time secretary, for not only would there be a salary to pay but it would be necessary to provide office space and equipment. However, if the small society finds it too difficult to employ an executive secretary, it should authorize its secretary and committee chairmen to employ stenographic services as required at the expense of the society. It should provide a means of interchanging ideas with public health and welfare agencies of the community. It should expect the chairmen of its committees to keep in touch with the corresponding committee chairmen of the State Society.

Can the State Society do more to help the county societies increase their usefulness? The outstanding assistance the State Society has been offering the county societies for the last fifteen or more years has been courses of lectures on all phases of medicine and surgery. The State Society Committee engages the lecturers, pays their transportation, and gives each a small honorarium. The county society need only provide the place of meeting and the audience, yet in these years only about two-thirds of the societies have availed themselves of the offer. The metropolitan counties prefer to provide their own courses.

Annually the State Society has conducted in Albany a conference with the secretaries of the county societies early in September before the fall meetings begin. The Society refunds to each secretary the entire expense incurred in making the trip. The average attendance is about one-half of the secretaries or delegated substitutes. Probably the programs have not been as valuable or attractive as they might have been, but one would expect the secretaries would welcome the opportunity to meet one another and interchange experiences, especially when the expenses are paid by the State Society. The secretaries from the larger counties are more likely to be present than those from the smaller societies.

In the last ten years nine such conferences

\$2 00			\$100 or more			
Allegany	Lewis	Schuyler	Dutchess	150	Orange	250
Cattaraugus	Livingston	Steuben	Erie	100	Oswego	100
Chemung	Madison	Tioga	New York	6,000	Richmond	200
Cortland	Orleans	Washington	Niagara	100	Saratoga	100
Fulton	Otsego	Wayne	Expenses of Delegates to State Meeting			
Genesee	St. Lawrence	Yates				
Greene	Schoharie		Not refunded			
\$3 00			Albany	Madison	Saratoga	
Delaware	Jefferson	Warren	Chemung	Montgomery	Schuyler	
Franklin	Ulster	Wyoming	Chenango	Oswego	Seneca	
\$4 00			Cortland	Putnam	Tioga	
Columbia			Fulton	Rensselaer	Wyoming	
\$5 00			Kings	Rockland	Yates	
Albany	Montgomery	Rensselaer	Lewis	St. Lawrence		
Broome	Niagara	Rockland	Refunded in full			
Cayuga	Oneida	Saratoga				
Chautauqua	Onondaga	Schenectady	Allegany	Greene	Queens	
Clinton	Ontario	Suffolk	Bronx	Herkimer	Schoharie	
Dutchess	Orange	Sullivan	Broome	Livingston	Steuben	
Essex	Oswego	Tompkins	Cayuga	Monroe	Tompkins	
Herkimer			Chautauqua	New York	Ulster	
\$6 00			Clinton	Niagara	Warren	
Monroe			Columbia	Ontario	Washington	
\$7.50			Genesee	Orange	Wayne	
Putnam			To \$25			
\$10			Delaware	Otsego	Sullivan	
Bronx	New York	Richmond	Oneida	Richmond		
Erie			Other amounts			
\$20			Cattaraugus	\$35		
Queens			Dutchess	\$10 per day and railroad fare		
\$10 to \$25			Erie	Railroad fare		
Kings	Nassau		Essex	Railroad fare		
\$12.50 to \$25			Franklin	Railroad fare		
Westchester			Jefferson	Railroad fare and hotel		
Compensation to Secretary			Nassau	Railroad fare and hotel		
No compensation			Onondaga	Railroad fare and hotel for one day		
Albany	Genesee	Schuyler	Orleans	Railroad fare		
Allegany	Orleans	Seneca	Schenectady	\$15 per delegate		
Chenango	Otsego	Sullivan	Suffolk	Railroad fare		
Cortland	Rensselaer	Washington	Westchester	Railroad fare and hotel		
Delaware	Schenectady	Wyoming	Number of Meetings Annually			
Essex	Schoharie		Two meetings	11 Societies		
No compensation but have Executive Secretaries			Three meetings	1 Society		
Kings	Onondaga	Westchester	Four meetings	22 Societies		
Nassau			Five meetings	1 Society		
Pay clerical expenses			Six meetings	5 Societies		
\$100 \$25 In part			Seven meetings	None		
Rockland	Cattaraugus	Yates	Eight meetings	3 Societies		
	Columbia		Nine meetings	7 Societies		
	Warren		Ten meetings	9 Societies		
\$75 \$10			Eleven meetings	None		
Broome	Lewis		Twelve meetings	2 Societies		
\$50			Meeting Days			
St. Lawrence	Montgomery		Monday	2 Societies		
Suffolk	Putnam		Tuesday	38 Societies		
Remission of dues			Wednesday	14 Societies		
Clinton	Madison	Ontario	Thursday	6 Societies		
Greene	Oneida	Wayne	Friday	1 Society		
Stated amount			Executive Secretaries			
Less than \$100			Bronx	Nassau		
Bronx	50	Jefferson	Erie	New York*		
Cayuga	25	Livingston	Kings	Onondaga		
Chautauqua	50	Monroe	Monroe	Westchester		
Chemung	35	Steuben				
Franklin	30	Tioga				
Fulton	?	Tompkins				
Herkimer	50	Ulster				
			* Elected secretary serves as part-time executive secretary			

\* Elected secretary serves as part-time executive secretary

with appropriate representatives of the State Society, (4) county societies should meet frequently for consideration of and prompt action upon communications received from the State Society and other societies and agencies, and (5) State Society committees should hold regular meetings in different sections of the state and invite representatives

of the neighboring county societies to meet with them

This study was undertaken at the direction of the Council of the Medical Society of the State of New York and grateful acknowledgment is made for the valuable assistance contributed by the secretaries of the county societies

## Appendix

Record of attendance of secretaries at the annual conferences held at Albany in September follows

### Nine Conferences

Albany	Onondaga
Erie	Bronx*
Genesee	New York*
Montgomery	Rockland*

### Eight Conferences

Columbia	Kings*
Monroe	

### Seven Conferences

Cortland	Schoharie
Delaware	Yates
Oneida	Broome*
Otsego	Nassau*

### Six Conferences

Cayuga	Washington
Greene	Cattaraugus*
Saratoga	Orange*
Sullivan	Westchester*
Ulster	

### Five Conferences

Clinton	Seneca
Essex	Tioga
Jefferson	Warren
Schenectady	

### Four Conferences

Livingston	Rensselaer*
Orleans	Suffolk*
Wyoming	

### Three Conferences

Franklin	Oswego
Madison	Dutchess*

### Two Conferences

Chautauqua	Schuyler
Herkimer	Niagara*

### One Conference

Fulton	Tompkins
Queens	Wayne
Steuben	St Lawrence*

### No Conference

Allegany	Ontario
Chemung	Putnam
Chenango	Richmond
Lewis	

Record of attendance of legislative chairmen at the annual conferences held at Albany in January or February follows

### Eight Conferences

Allegany	Bronx*
Greene	Richmond*
Monroe	Westchester*

### Seven Conferences

Albany	Cortland*
Broome	New York*
Onondaga	

### Six Conferences

Genesee	Erie*
Nassau	Kings*
Queens	Ontario*
Suffolk	

### Five Conferences

Dutchess	Cayuga*
Madison	Clinton*
Orange	St Lawrence*
Washington	Schenectady*

### Four Conferences

Columbia	Ulster
Essex	Warren
Otsego	Livingston*
Rensselaer	

### Three Conferences

Niagara	Oneida*
Oswego	Tompkins*
Steuben	Wayne*
Delaware*	

### Two Conferences

Chautauqua	Yates
Jefferson	Chemung*
Schoharie	Montgomery*
Seneca	Tioga*

### One Conference

Cattaraugus	Putnam
Franklin	Sullivan
Fulton	Orleans*
Herkimer	Saratoga*

### No Conference

Chenango	Schuyler
Lewis	Wyoming
Rockland	

### Dues According to Counties

\$1 00	Seneca
\$1 25	Chenango

\* Represented by substitute.

\* Represented by substitute

# Maternal Welfare

*From time to time under this heading articles will appear on obstetric subjects which are deemed of importance as aids to improvement of maternal welfare in New York State. The members of the committee are Charles A. Gordon, M.D., Chairman, James A. Quigley, M.D., and Ferdinand J. Schoeneck, M.D.*

## Prophylactic Forceps and Episiotomy

THE increasing use of prophylactic forceps and episiotomy would seem to call for a discussion of this subject. Some obstetric centers advocate this type of delivery as an almost routine procedure, whereas others condemn it quite wholeheartedly. All are in agreement, however, that if this type of delivery is used it must be a hospital procedure and should be performed by physicians who have had special training in operative obstetrics.

The late Pomeroy, of Brooklyn, introduced a method of delivery known as forceps control. This method consisted of applying forceps to the head after there was a considerable crown, the idea was to protect the perineum, and the procedure was employed when spontaneous delivery was anticipated within a comparatively short time. Pomeroy also advocated episiotomy as an adjunct for the same purpose. DeLee, of Chicago, popularized the term "prophylactic forceps." The indications for this operation, in addition to protecting the perineum, are generally considered to be of a prophylactic nature insofar as preventing cerebral damage to the baby. DeLee's contention is that a careful low forceps extraction with episiotomy puts less strain on the fetal cerebral structures than the pounding of the head against the perineum in the second stage. The fact that delivery may be performed sometime prior to that in which a spontaneous delivery would occur is also of analgesic value to the mother. It is conceded that there should be no pelvis-cephalic disproportion present. Both Pomeroy and DeLee received considerable opposition when they introduced their methods.

There seems to be little question that the use of episiotomies, especially when performed on primiparas, in the hands of trained obstetricians gives good anatomic results. A straight incision lends itself much more readily to anatomic approximation than does a ragged spontaneous laceration. The fact that the vast majority of primiparas will sustain perineal lacerations during delivery is conceded.

The application of forceps in the prophylactic forceps operation is comparatively simple, since the head is in an occipitoanterior position.

Is there any danger involved in the employment of prophylactic forceps? A careful consideration will show the answer to be yes. The primary danger would seem to center around infection. It must be remembered that where forceps are applied the tips of the blades pass

through the vagina and eventually come to rest within the lower portion of the uterine cavity. Hence, if the blades are contaminated or if there are pathogenic bacteria in the vagina, infection may be carried into the uterus. So, also, when the perineum is incised for an episiotomy, it is conceivable that infecting organisms may be transmitted into the wound. We must, therefore, be absolutely sure of our asepsis if we are to carry out this procedure safely. This would seem to limit the operation to the surgically clean, hospital delivery room. It has been shown time after time that any type of operative delivery is more prone to infection than normal spontaneous delivery.

Further danger may be said to center around the employment of forceps per se. Forceps, if improperly employed, may be brutal instruments, and it may truly be said that to use forceps properly is an art. In experienced hands they occasionally cause damage, in inexperienced hands they frequently are dangerous. The question involved is whether this type of low forceps extraction would cause more or less possibility of cerebral damage than spontaneous delivery. Parenthetically, it might be said in general that when we start improving on nature we are taking on a pretty large order.

As far as episiotomy is concerned, a practical anatomic understanding is essential. Median episiotomy or perineotomy is easy to perform and comparatively simple to repair. However, if employed in a short perineum, it may readily extend to involve the sphincter ani or even the rectum itself. On the other hand, the mediolateral or lateral episiotomy seldom extends to involve the rectum, although it may extend around it or may extend to involve the sulcus of the vagina. The proper repair of this lateral type of incision necessitates an intimate knowledge of the anatomy involved. There can be no question that a good repair of an episiotomy gives a nice anatomic result, on the other hand, a careful approximation of a spontaneous laceration is highly satisfactory from a practical point of view.

Common sense dictates that the results obtained from the employment of prophylactic forceps depends on the training and adeptness of the individual physician. There certainly can be no excuse for the employment of nominal prophylactic forceps, which is simply a low forceps extraction, to speed up delivery. This type of attitude can only lead to trouble.

## County Societies That Accept Associate Members

Kings  
Nassau  
OntarioSullivan  
Tompkins  
Westchester

## County Societies That Contribute to Physicians' Home

Bronx  
Herkimer  
OntarioOrleans  
Otsego  
Rockland

## SURGICAL INSTRUMENTS NEEDED

A letter from the Duchess of Leinster to the J A M A declares that "The situation in England is one of intense suffering. Surgical instruments and equipment are urgently needed NOW. Will you please help me to help the doctors and surgeons at home to relieve this suffering by publishing this letter together with the enclosed list of instruments? This list has just been flown across to me by clipper, from a source of highest authority in London."

"The instruments urgently needed in British first aid stations are

Airways, endotracheal	Pharyngoscope with
Apparatus, anesthetic (portable)	battery in handle
Apparatus, intravenous	Plates, bone
Aspirators	Pliers, side cutting, 6 inch
Autoclave	Probes, all types
Basins	Retractors, all types
Cabinets, instrument	Rings, laparotomy
Cannula, brain exploring	Saws, all types
Catheters	Scissors, all types
Chisels, bone	Screws, bone plating
Clamps, bone plating	Shears
Clamps, intestinal	Snare
Clips, towel	Sound, metal
Curets, mastoid	Spatula
Diagnostic sets	Speculums, ear, eye, nasal, rectal
Depressors, tongue	Sphygmomanometer, aneroid
	Stands for irrigators
	Sterilizers, all

Directors, grooved with myrtle leaf	Stethoscopes
Drill, bone	Stools, anesthetists' with revolving top
Drills, cranial	Stools, foot
Elevators	Syringes, all sizes, with needles
Forceps, artery, all types	Tables, instrument
Forceps, bone, rongeurs	Tables, operating
Gags, mouth, Denhart	Trocars
Gorget, lithotomy	Tubes, tracheotomy
Gouges, bone	Wax, bone, sterile
Headbands, metal, with mirrors	Buckets
Hemostats, all types	Clippers, hair
Holders, needle	Cups, medicine
Inhalers, chloroform	Jugs, graduated
Knives, all types	Measures, glass, graduated
Lamps, operating, emergency, complete	Pans, bed, enamel
Mallets, metal, lead filled	Pitchers, 3 quart
Mirrors, laryngeal	Stoves, petrol or paraffin, table model
	Tables, bedside
	Urinals, E I

"I feel this is the quickest way to appeal to all doctors in the hope that they will read this and send their surplus instruments to me at the address below. All contributions will be sent to England at once, where they will help to save many lives that may otherwise be lost—**RAFAELLE LEINSTER**, The Duchess of Leinster, Surgical Supplies, 745 Fifth Avenue, New York."

## SOCIAL HYGIENE WEEK IN NEW YORK CITY

An expanded program of activities for New York City Social Hygiene Week—January 29 through February 6—is announced by the Bureau of Social Hygiene, New York City Department of Health. Meetings, film showings, demonstrations, lectures will be held, all of interest to physicians-in-practice, medical students, nurses, laboratory and public health workers, and the general public.

The activities are as follows:

January 29, 10 00 A M.—Laboratory Aspects of Syphilis Control, 1 00 P M.—The Role of the Family Physician in Venereal Disease Control, 2 30 P M.—Treatment of Infectious Syphilis as a Public Health Measure

January 30, 10 00 A M.—Nonsyphilitic Venereal Granulomas (chancroid, lymphogranuloma venereum, and granuloma inguinale), 1 00 P M.—Education of the Nonmedical Public Health Worker, 2 30 P M.—Nonvenereal Genital Lesions

January 31, 10 00 A M.—Laboratory Aspects of Gonorrhea Control, 1 00 P M.—Education of the Public on Venereal Disease Problems, 2 30 P M.—Treatment of the Patient with Gonorrhea

February 4, 8 30 P M.—*Clinical Syphilis* (This meeting will be held at The Academy of Medicine, 2 E 103rd St., New York City)

February 5, All-Day—*Social Hygiene Conference at Hotel Astor, New York City*, 8 30 P M.—Medical Advances in Venereal Diseases

February 6, 10 00 A M. to 4 00 P M.—Continuously program lectures, motion pictures, playlets, and special events for the public

All sessions (except where otherwise noted) will be held in the auditorium on the second floor of the Health Department building, 125 Worth St., New York City. No registration is required.

The program is under the general supervision of Dr. C. C. Pierce, Regional Director for the U S Public Health Service. Cooperating agencies include the Section of Dermatology and Syphilology, Academy of Medicine, New York, New Jersey, and Connecticut state venereal disease control divisions, U S Public Health Service, Metropolitan Health Officers Association, and the five medical colleges in the city.

For detailed program write to Bureau of Social Hygiene, 125 Worth St., New York City

# Medical Preparedness

Report of the Analysis of Physical Examination Form No 200 Representing  
Partial Returns from 120 Local Boards, New York City Selective Service

## Medical Bulletin No 1

THE first analysis of the physical examinations of men rejected by the examining physicians attached to New York City's local selective service boards and induction boards constitutes this report.

The report represents partial returns from 120 local boards. The total registrants examined number 1,643 of which 1,213 were accepted for general military service, leaving 430 rejected, some of whom were fit for limited duty only.

This report, which is a fair sampling of the rejects, does not show any specific deterioration in the population but rather enhances the fact that the general health of the community is good.

The report divides the analysis into primary and secondary causes for rejection. In addition to the primary cause for which a man was rejected, there were frequently other defects present, sometimes resulting from the main cause for rejection and sometimes merely being in addition to it.

The causes for rejections, listed in the report, follow:

Under the heading of developmental defects, which are 2.7 per cent of the total men examined, 26 were rejected for being underweight, a condition that was present in 17 in addition to the primary causes for rejection, 11 were rejected for overweight, and in 12 instances it was of secondary importance. Two were turned down for deficient height, and 1 was under the accepted height standard besides having a more important cause for rejection. None were rejected because of poor chest expansion, but 5 who were rejected for other reasons failed to meet the chest expansion requirements. One man was rejected for deformity of the head and 4 for deformity of the spine, while for 12 deformity of the spine was a secondary defect. None were rejected because of deformity of the chest alone, but in 3 it was a secondary condition.

Defective vision was the primary cause of 74 rejections (5 per cent of the total examined) and a secondary condition in 32.

One and four-tenths per cent of the total had ear troubles. Nineteen were rejected for chronic otitis media (chronic ear infection), and 4 had it in addition to other causes for rejection. Impaired hearing returned 4 to civilian life, and in the case of 9 it was a secondary condition.

Nose and throat troubles caused only 3 rejections (0.9 per cent of the total), and those for nasal defects. But 5 others had secondary nasal conditions, 3, infected tonsils, and 5, speech defects.

Teeth and mouth conditions caused more rejections than any other single cause (5.7 per cent of the total). Eighty-eight were rejected for insufficient teeth, and for 20 it was a secondary condition. Four men were rejected for disease of the gums, 1 had it in addition to another cause for rejection, and 1 man was rejected for deformity of the jaw.

Diseases of the heart were represented by 66 rejections. Acquired heart diseases were found

in 4.9 per cent of the total men examined. Fifteen were rejected for rheumatic heart disease, in 2 cases it was a secondary condition. Thirty were rejected for valvular heart disease, and 7 had it in addition to other causes for rejection. One was rejected for myocarditis, 8 for hypertension, and 3 for tachycardia, while 2, 21, and 12, respectively, had these cardiac defects while being rejected for other causes. Secondary to the cause for the man's rejection was 1 case of hypotension. Enlarged heart disqualified 3 for army life, and 9 suffered from it in addition to other causes for rejection. Three were rejected for an organic systolic heart murmur, and 6 had it as a secondary cause for rejection. One was rejected for angina pectoris.

Two were rejected for congenital heart disease (0.1 per cent of the total), while 1 suffered from it as a secondary condition to rejection.

Sixteen (1 per cent of the total), were rejected for hernia, and 9 had hernia in addition to other causes for rejection.

Few were rejected for stomach and intestinal troubles. Three were out because of peptic ulcers (0.2 per cent of the total), with 1 suffering from them as a secondary condition to rejection. Ten had hemorrhoids in addition to more serious conditions which caused their rejection, while 1 (0.06 per cent of the total) was rejected for an infected pilonidal sinus. One suffered from this but only as a secondary cause for rejection.

Genitourinary troubles accounted for very few rejections (0.4 per cent of the total). Four were rejected for large varicocele, and in 6 it was a secondary condition. Hydrocele was the secondary condition in 3 cases, and undescended testicle in 1 case, while it caused the actual rejection in 2.

Disease of the skin (0.06 per cent of the total) accounted for 1 rejection and was a secondary condition in 1 case.

Disabilities resulting from accidents accounted for 5 rejections (0.3 per cent of the total), 4, loss of limb, and 1, loss of toe or finger. The latter was a secondary condition for rejection in 1 case.

As the probable result of infantile paralysis, 28 were rejected (1.7 per cent of the total), 18 for paralysis of limb and 10 for deformity of limb. Three and 5, respectively, suffered these two conditions as a secondary cause for rejection.

Five men (0.3 per cent of the total) were rejected for defective joints, and in 1 case it was a secondary condition.

Foot and leg conditions caused relatively few rejections (0.3 per cent of the total). Two were rejected for varicose veins, and in 7 it was a secondary condition. Only 1 man was rejected because of flat feet, although 16 who were rejected for other causes also had them. Osteomyelitis deferred 2, and hammer toe was a secondary cause for deferment in 1 case.

Fifteen were rejected for chronic pulmonary tuberculosis and 1 for spontaneous pneumothorax (together 1 per cent of the total examined), while hemoptysis was found to be a secondary condition in 1 man.

Furthermore, not infrequently a delivery that promises to be simple becomes a very difficult extraction if the outlet has been misjudged. This may be true in spite of the fact that there is a considerable crown present.

Of course, each physician must be his own judge as to whether he will employ prophylactic forceps and episiotomy. In coming to a conclusion several factors must be considered. This procedure is an operative one and carries with it the dangers of any operative delivery. Adeptness with forceps depends on training and experience. Unquestionably, the improper application and faulty technique of extraction will give poor results.

Asepsis and anesthesia must be given due consideration. Certainly the physician assumes an added responsibility when he undertakes this type of artificial delivery.

In general it would appear that delivery by means of prophylactic forceps should be restricted to hospital deliveries by experienced obstetricians. One point is certain: any artificial method of delivery carries a higher morbidity risk as well as a higher fetal mortality rate than spontaneous delivery. Probably these factors, more than any others, should guide the physician in his decision as to whether or not he should employ prophylactic forceps.

### DANGER OF "PICK-ME-UP" DRUGS

Because they merely mask fatigue rather than overcome it, the popular "pick-me-up" drugs lead the victim to draw unsuspectingly on energy reserves—a process that must sooner or later end in physical and nervous bankruptcy, Dr Iago Galdston, New York City, declares in *Hygeia*, *The Health Magazine* for October.

The "pick-me-up" addict is more likely to suffer from nervous fatigue than from exhaustion due to hard muscular labor, he points out. Two types of drugs are advertised to make an appeal to such sufferers: first, drugs such as caffeine, benzedrine sulfate, and alcohol that deaden the sense of fatigue and surround the victim with a false feeling of well-being, and second, more readily available fuel, such as dextrose, glucose, or their elements.

"The first type," the author says, "strikes dangerously at the central nervous system, the second, more pretentious in its claims, would make it appear that food, rather than rest, is the cure for fatigue. Both types are either superfluous and useless, or they do pick you up only to let you down with a terrible crash, perhaps at the risk of health."

Describing how the first type of "pick-me-up" works, Dr Galdston cites amphetamine sulfate, popularly known as benzedrine sulfate, a pep-producer widely used by students to keep them alert for "cramming sessions" before examinations. "In most persons," he says, "this drug raises blood pressure and increases heart action if

taken in sufficient dosage. The whole system may be thrown into a state of alarm, sensibilities are heightened, talkativeness increases markedly, a pronounced feeling of elation overtakes the person who, half an hour before, may have been jaded to exhaustion. Repose is impossible while the benzedrine sulfate brass band is playing. Then suddenly the music stops, and the deluded pep-chaser finds himself 'dropped out of the window.' More and more pills are taken as the addict tries to stave off the inevitable energy collapse. Jaded nerves are flogged into further efforts, heart and brain are teased beyond normal capacity.

"The company that manufactures benzedrine is a reputable pharmaceutical house, it is emphatically not to blame for the indiscriminate and unsupervised use of this drug.

"We should regard normal fatigue not as an enemy but as a warning cry. Because it has such a vital bearing on industrial efficiency, accident and sickness rates, it has been intensively studied in many places throughout the world. It is significant that none of the fatigue laboratories of the world has ever recommended or manufactured a patented pick-me-up."

"The ideal method of avoiding undue fatigue is a regulated program of rest, work, and recreation. If you are doing too much, cut down on your activities. On the other hand, if you are already husbanding your energy and yet find yourself unduly fatigued, what you need is a good doctor."

### MEDICOMILITARY CONFERENCE

A symposium under the auspices of the 205th General Hospital (RAI) and the 4th Hospital Center (RAI) on the Psychiatric Aspects of Military Medicine will be given at the Psychiatric Division of Bellevue Hospital (Foot of East 30th Street, New York City) on Tuesday, February 4, 1941, at 8:30 p.m.

The program will be as follows: (1) Introductory Remarks by Dr Leo L. Orenstein, 1st Lt. Med.-Res., U. S. Army, (2) "The Army Medical Officer Looks at Psychiatry," Dr Samuel Adams Cohen, Col. Med.-Res., U. S. Army, Commanding 205th General Hospital, presiding, (3) "Psychiatric Examinations in the Armed Forces," by Dr Karl M. Bowman, Lt. Comdr. M. C., U. S. N. R., (4) "Neuroses of War," by Dr Abram Kardiner, (5) "The War of

Nerves," by Dr Sandor Rado, (6) "A Brief Consideration of the Psychoneuroses of the Last War and What We Might Expect in the New Order of Things in This Country," by Dr Edwin G. Zabriskie, Lt. Col. Med. Corps, formerly Consultant in Neuropsychiatry, First Army A. E. F.

(7) The discussion will be opened by Dr Francis M. Shockley, Lt. Col. Med.-Res., U. S. Army, Dr Clarence P. Oberndorf, and Dr George E. Daniels. (8) The concluding remarks will be made by Dr Joseph Haas, Lt. Col. Med.-Res., U. S. Army, Commanding 4th Hospital Center.

Officers and prospective officers of medical departments of the armed forces are cordially invited to be present.

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Under the heading of chronic lung conditions not due to tuberculosis (0.2 per cent of the total), the report to Colonel McDermott showed that there were 2 rejections for chronic bronchitis, while 1 man suffered from it in addition to the primary cause for rejection. There was 1 rejection for bronchial asthma and 1 for pleurisy.

Only 6 men (0.4 per cent of the total) were rejected because of syphilis, but there were 90 cases of a positive Wassermann which deferred the men in question until they could be re-examined. There were 26 causes of doubtful Wassermans on the basis of which the men were deferred until further examinations could be made. Gonorrhea was present in only 1 case, and then it was a secondary cause for rejection.

Two men had albumin in the urine, but this was not the primary cause for rejection.

Two men (0.1 per cent of the total) were rejected for chronic nephritis.

The report shows 8 cases of rejection for diabetes mellitus and 1 for persistent glycosuria (together 0.5 per cent of the total), although in 6 this latter condition was present in addition to a primary cause for rejection.

Endocrine gland disturbances accounted for 2 rejections (0.1 per cent of the total), 2 men with cases of toxic thyroid. This condition was present in 2 other cases in addition to the primary causes for deferment, as was Froelich's syndrome in 1 case.

Diseases of the blood, chronic myelogenous leukemia, and secondary anemia accounted for 1 rejection because of the first condition (0.06 per cent of the total), while secondary anemia was found to be present in 7 cases deferred for other reasons.

Psychiatric problems presented 0.8 per cent of the total and led to the deferment of 12 mental defectives and 1 man for nervous instability. Four men were mentally defective, although they were deferred for other reasons.

Nerve diseases (0.2 per cent of the men examined) were the cause of 4 deferments—1 for facial paralysis, 1 for ataxia, and 2 for epilepsy. One cause of trigeminal neuralgia was found, but it was a secondary cause for deferment.

### Comment

The major causes for rejection can be divided into the following groups:

1. Developmental defects, such as defective vision, congenital deformities, and mental deficiencies.
2. Neglect which results in chronic otitis media, underweight and overweight, and insufficient teeth.
3. Traumatic causes, the result either of athletic or other exercise or type of employment and producing hernias, flat feet, etc.
4. Diseases as yet not conquered by medicine, such as rheumatic and valvular heart disease, hypertension, and the results of infantile paralysis and pulmonary tuberculosis.

It is surprising to note the small number of glandular disturbances, blood dyscrasias, pulmonary lesions, and cardiac disturbances. On the basis of these figures it is possible to draw the following conclusions:

1. In the age period between 21 and 35,

the general health of the population seems to be good.

2. This good medical health is apparent from the fact that most of the faults (except those due to neglect) are irremediable under the best conditions in medical practice, and it is all the more striking that the figures show up as they do because these people have lived through a period of almost ten years of economic and mental stress which at times necessitates the curtailment of adequate diet, proper housing, and other facilities. There is very little evidence to show that acute illnesses have left permanent had aftereffects due to the absence of adequate medical care.
3. One can conclude from these figures that a general health program should be so directed as to stress prevention and bring to the younger people of the nation supervision and instruction on how to preserve their teeth, how to stop incipient cases, and how to handle the beginnings of lesions in the gums which eventually will cause the loss of masticating teeth. Likewise, the misuse of their eyes, resulting in the number of visual defects, would make it seem that an educational program on the preservation of eyesight might be included in such a program directed toward the high-school age boys, all with the idea of stressing prevention, as the foregoing has been a large factor in causing rejections.

Finally, more attention should be paid to correcting the industrial hazards of health, and an intense antivenerical campaign with special stress on prevention seems to be indicated.

In conclusion, it must be reiterated that this report is but "a sampling" of the returns available to date. It is proposed to issue continuing reports as more material for statistical study becomes available. The conclusions drawn must, at this time, be considered as tentative. If substantiated by subsequent surveys and paralleled from selective service headquarters throughout the country, a better estimation of the health of this age group in the population will be available than from any heretofore at our disposition. This survey has the added value in that two sets of medical examiners have collaborated to produce the record—the first, the local board examining physician and his medical advisory board of specialists, and the second, physical check-up by the board of specialists at the army induction centers.

Respectfully submitted,  
SAMUEL J. KOPETZKY  
Colonel—MCR—USA  
Medical Division

THE DETAILED CAUSES OF REJECTIONS		
Total Registrants Examined		1,643
Accepted for General Military Service		1,213
Rejected for General Military Service (Fit for limited duty only or rejected)		430
Causes for Rejections	Primary	Secondary
Underweight	26	17
Overweight	11	12
Deficient height	2	1
Poor chest expansion	0	5
Defective vision	74	32
Chronic otitis media	19	4
Impaired hearing	4	9
Nasal defects	3	5

Causes for Rejections	Primary	Secondary	Causes for Rejections	Primary	Secondary
Infected tonsils	0	3	Flat feet	1	16
Speech defect	0	5	Osteomyelitis	2	0
Insufficient teeth	88	20	Hammer toe	0	1
Disease of gums	4	1	Pulmonary tuberculosis	15	0
Deformity of jaw	1	0	Chronic bronchitis	2	1
Rheumatic heart disease	15	2	Bronchial asthma	1	0
Valvular heart disease	30	7	Pleurisy	1	0
Myocarditis	1	2	Spontaneous pneumo-		
Hypertension	8	21	thorax	1	0
Tachycardia	3	12	Hemoptysis	0	1
Congenital heart disease	2	1	Deformity of chest	0	3
Hypotension	0	1	Undescended testicle	2	1
Enlarged heart	3	9	Syphilis	6	90 (Positive Wassermann)
Systolic heart murmur	3	6			
Angina pectoris	1	0	Doubtful Wassermann	0	26
Hernia	16	9	Gonorrhea	0	1
Peptic ulcer	3	1	Albumin in urine	0	2
Hemorrhoids	0	10	Chronic nephritis	2	0
Pilonidal sinus	1	1	Diabetes mellitus	8	0
Varicocele	4	6	Glycosuria	1	6
Hydrocele	0	3	Toxic thyroid	2	2
Disease of skin	1	1	Froelich's syndrome	0	1
Deformity of head	1	0	Myelogenous leukemia	1	0
Deformity of spine	4	12	Anemia	0	7
Loss of limb	4	0	Mental defectives	12	4
Loss of toe or finger	1	1	Facial paralysis	1	0
Paralysis of limb	18	3	Ataxia	1	0
Defective joint	5	1	Epilepsy	2	0
Deformity of limb	10	5	Trigeminal neuralgia	0	1
Varicose veins	2	7	Nervous instability	1	0

## American Alumni of British Medical Schools

30 Rockefeller Plaza, New York, N. Y.

December 18th, 1940

Dr Samuel J. Kopetzky  
Council Committee on Medical Preparedness  
71 East 80th Street  
New York, N. Y.

Dear Doctor Kopetzky

In the December 15th issue of the *NEW YORK STATE MEDICAL JOURNAL*, the Council Committee on Medical Preparedness states on page 1805 the following:

"It should be understood by all that an Army Regulation such as this can be changed only by the President or the Secretary of War. What the possibility of such action there may be is entirely unknown to the Council."

The above refers in part to the physicians who have been graduated from the foreign medical schools.

The Council should be advised that a committee was sent to Washington by this Alumni. On November 18, 1940, this committee was informed, during the course of an interview by the Surgeon General's executive assistant, that the Army Regulation is not an Act of Congress but a ruling made by the Surgeon General of the Army. The ruling was made to prevent physicians who were graduated from medical schools abroad which do not compare favorably with those schools approved by the Council on Medical Education and Hospitals of the American Medical Association. The Surgeon General's executive assistant stated that no information has been made available to the Surgeon General, hence no opinion can be made on the many foreign medical schools. He further stated that in the past graduates from the foreign medical schools have been commissioned in the Reserve. If information is made available and

if the foreign medical schools compare favorably with the Grade A medical schools from the United States and Canada, then the Army Regulation *may be amended* so that those graduates from the foreign medical schools *may be commissioned in the medical corps* of the Reserve. Those physicians who are conscripted will be conscripted as privates. However, they may immediately apply for a commission to their local commander and each case will be judged on its merit.

In the course of an interview with the assistant to the Assistant Secretary of War, on November 18, 1940, the committee was informed that an Army Regulation concerning the medical corps is initiated by the Surgeon General of the Army. Any change in the Army Regulation must be initiated by the Surgeon General of the Army.

Hence the quotation appearing above is misinforming the readers of the *JOURNAL*.

This Alumni would like to point out that the medical societies from the counties of the Bronx, Kings, New York, Queens, and Nassau adopted resolutions during the month of October, 1940, indicating gross dissatisfaction with the Army Regulation and its effect on the graduates from the foreign medical schools. The county societies urged that the Regulation be rescinded.

This Alumni would be pleased to have the Council Committee on Medical Preparedness from the State of New York reveal what has been done to answer the 10,571 members of the above societies. This figure comprises 59.7 per cent of the membership of the Medical Society of the State of New York. These figures were taken from the Medical Directory of New York, New Jersey, and Connecticut, 1939-1940.

Yours very truly,

LEON L. RACKOW, M.D.  
Vice-Chairman, Executive Committee

# Medical News

## Testimonial Dinner for Dr James M. Flynn

THE Monroe County Medical Society for its annual meeting on December 17, 1940, arranged a dinner in honor of the president of the Medical Society of the State of New York, Dr James M. Flynn. The dinner took place in the Rochester Academy of Medicine.

Dr Albert D. Kaiser, president of the Monroe County Medical Society, in his opening remarks called attention to the fact that this was the one hundred and twentieth annual meeting of the county society.

"It is rather interesting," Dr Kaiser said, "when one reviews the early motives that existed in the minds of the doctors who founded this county medical society and undoubtedly many others throughout the country. The doctors of a hundred or more years ago found that it was necessary to have some sort of an organization in which they could regulate their own practice and in which they could supervise the work of their practitioners."

"I am quite sure that their purpose has prompted the organized medical societies throughout these many decades. The idea of the county medical society spread to the state and finally to the nation."

"It is rather interesting to look back over the last twenty-five or thirty years to see the trend of medicine. The discoveries in medical science have made it necessary to break up the medical profession. We have teachers, investigators, clinicians, hospital directors, and public health officials, all of them doctors, but all of them engaged in a fairly highly specialized field, to say nothing of the many specialists in the field of clinical medicine."

"I think there has been a tendency in recent years on the part of some physicians to belittle the importance of organized medical societies. They see perhaps only their own interests and are perhaps a little intolerant of what the man does in another field. I am quite sure that when we see medicine in its broad aspect, no one department could exist without the others. And every physician should realize that the organized medical society tends to bring together all of the groups that are associated with the practice and development of medical science."

"I am very glad that I have had some experience in the last few years with what organized medical societies aim to do. I believe that it is only by uniting our efforts and pooling the things which we can contribute to a medical society that we can reach the utmost usefulness in the field of medicine."

"Every county medical society is proud of its members, because the first thing we try to do is to improve conditions for the average man. But we also like to see exceptional effort on the part

of some of the members. I for one feel very proud of our society here in Monroe County, that we have had outstanding men in this society who have contributed to various fields of medical endeavor."

"Tonight we are gathered here for a specific purpose, because one of our men has had a vision—he has looked ahead—he has given of his time and effort to build along the lines of organizations from which we can all benefit. As members of this society we are proud that one of our men has distinguished himself and has brought honor to this society."

"So tonight we are welcoming our guests who are celebrating with us the success of Dr. Flynn in reaching the highest peak in the gift of the doctors of the State of New York. We are very happy that men have come from afar to talk briefly to us not only about Dr. Flynn but about some of the problems of medicine."

Mr. Roland B. Woodward, executive vice-president of the Rochester Chamber of Commerce and a member of the Board of Regents of the State Department of Education, was then introduced.

"I am very happy to be here and add my word of felicitation to that of many others for Dr. Flynn and the honor which you do him tonight. My own association with him has been very pleasant. He has helped me and advised me on some problems that have confronted the Board of Regents, and I have found his advice sound and honest and helpful."

"I remember speaking before a group of you when you were celebrating the opening of this building, and stressing the need for your taking some interest in public affairs, but I mean public affairs as they affect the things which you know best, as they affect your professional group, as they affect legislation that controls or directs or limits your usefulness. It will not do for our highly educated professional men to draw aside from our public life and allow all of it to be done by those who perhaps know little or nothing about the things with which they are vitally concerned."

"I have learned quite a bit about this in sixteen years of service on the Board of Regents. The state is deeply concerned with the education of the physician, with his licensure, with the rules and regulations that govern his practice. And they are especially concerned with his capacity for self-government professionally. And I am happy to say that having dealt with all the professions that are licensed by the State of New York, I think there is no professional group in the state that has approached so nearly to a good degree of self-government as the medical profession."



Left to right Albert D. Kaiser, M.D., president of the Monroe County Medical Society, Nathan B. Van Etten, M.D., president of the American Medical Association, James M. Flynn, M.D., president of the Medical Society of the State of New York, C. Stewart Nash, M.D., vice-president of the Monroe County Medical Society

"With the problems ahead, it is very important that you continue to do so and that you continue to do so with increasing effectiveness, unless you would have imposed upon you something that would not only handicap you in your work but which would restrict your value to the great public which you serve

"Dr. Flynn, you are a good example of what I am talking about, and I am happy to add a word of tribute to your public usefulness as well as your professional competence and professional usefulness. I congratulate you and wish you many more years of such useful service."

Dr. Leo F. Simpson of Rochester was then called on.

"I have been asked to say a few words about Jim, the Boy and the Man. That, I suppose, is based on the idea that the man is in the boy. What the man ultimately becomes is undoubtedly in the boy—in potentia—but so, in like manner, a thousand other men are in the same boy.

"Heredity may lay down the instrument, but environment more or less determines the kind of a tune that is to be played on it during the years.

"We, in medicine, are ever considering the possibility of modifying even the instrument itself, while educators, biochemists, students of social welfare, and the great religious movements are ever confident of their ability to change the

resulting tune for the better. A sort of conditioning the reflexes, as it were.

"One cannot, however, be dogmatic in these fields for they are filled with unpredictable surprises. At one end we see Benjamin Franklin, one of the greatest all-around intellects America has ever produced—the man who almost single-handed won our American Revolution—in the Masonic lodges of France. He was the last child of fourteen children, and his whole family, by comparison, was a total blank.

"At the other end, we see the rapid disintegration of fine, cultural stocks because biological honesty does not necessarily co-exist with cultural fineness. Too often, when certain cultural limitations have been reached, racial suicide follows almost automatically.

"But what has all this to do with Jim? I will, for a few moments, take a passing glance at his heredity, his boyhood education, and also trace some behavior patterns that foretold the man. Of the sources of the urges that moved him onward, make your own guess. Ambition may be nothing but unsatisfied chemistry, or it may be a holy fire.

"We were born within a stone's throw of each other, of mothers whom each always thought were saints on earth, and know today are the same in heaven. Our fathers were grand men, in fact, they were the best that we could find.

"We played together as children, went to the

same school, where in addition to the three R's, they tried to teach us that there was a Supreme Authority above all from which all authority should flow, that the Ten Commandments were real and not just a bit of literature, and that we were not created for this world alone.

"These teachings have played a very fundamental part in Jim's life.

"Incidentally, a total disregard of such beliefs by the leaders of men bids fair to transform this world into a slaughterhouse.

"We got plenty of old-fashioned discipline, and as there were six children in each family our opportunities for becoming self-centered were rather limited.

"My real association with Jim began over forty years ago when we were carrier boys for the *Democrat & Chronicle*. We had to be at the office at 4:00 A. M. As we lived in the far north-western part of the city that meant a jaunt of at least six miles before we completed our deliveries and got home again.

"My mother would drag me out of bed at three o'clock and many times I was not fully awake until I got out into the air. Coming to Jim's house, just a whistle, a window went up, and he would call 'I'll be right down.' He apparently never slept then, nor has he been caught asleep very often since. We did this for four years, every day in the week, starting at about thirteen years of age. It never seemed a hardship. Didn't we get a dollar and a half a week? Such jobs were priceless. Night street cars were unknown, and if a snowstorm was on we just waded through.

"We were prepared for anything the weather man had in stock, but even he, at times, was kind. A few hundred beautiful sunrises were shown, and as there was no one else about, it was easy to imagine that they were put on for our special benefit. And, so to bed again at seven, up at eight, and we would make our way back to Fitzhugh Street to the Rochester Free Academy, this time carrying our lunch.

"In the winter, after school, we played handball at the old R. A. C., and in the summer and fall played baseball and football. We had fine teams. Did I say we played baseball and football? I played, and in the fall kept pretty well bruised most of the time. What was Jim doing? He was starting in life. He was always the manager, and looked after the receipts.

"After graduation from carrying papers and high schools, I studied medicine, and graduated at twenty-one. One day, a few years later, Jim came into my office, and announced that he was going to study medicine. Where had he been, and what had he done to develop the rugged individualism that was as obvious then as it is today?

"For a year or two he had worked at, and I believe became a first-class clothing cutter. But that did not satisfy him. His experience as a high school manager, and as manager of several amateur teams made the life of a clothing cutter inane, and abruptly he cut himself away from his

moorings, and became manager for three minor league baseball clubs in succession—always advancing. His last team, on their first road trip, won ten games straight. They were received, when they returned, by all the city fathers and a band. On the next road trip they lost nine games, all by one run. On the day after he returned from that trip, Jim was fired.

"It was midsummer and no time to go home. He went to a telegraph office and sent telegrams to the president of every baseball league in the United States, which read 'James Flynn, umpire, now available for contract.' He got three answers. He had solved his baseball problem. He would make a fine living, no matter which team won.

"Eventually he was transferred to the Pacific Coast League. The president was located in Chicago, and his parting words to Jim were 'No one out there can fire you. You'll have to quit yourself.'

"He found out later just what that message meant. He went to leagues where baseball was a war, and where the word 'fan' was evolved from the fanatics in the stands who wavered between cheers and homicide. Umpires withered, ran out, and even wore out, but Jim stayed three years.

"He never smoked, never drank, and never read the sporting pages, said his prayers at night, and with these prophylactic measures faced the next day. One umpire to a game, and the decisions were roared with a finality, the echoes of which still linger.

"In this tempestuous atmosphere he passed his days until the time came for another momentous decision. As usual, the decision stood. This time it was to study medicine. He had been taking courses at Leland Stanford University between seasons and without hesitation he again cut his moorings.

"After graduation and his internship, he became an x-ray specialist. Now I think I have brought him to man's estate.

"He translated to the higher field of medicine the same qualities that made him what he was before. He has continued to grow in stature. He holds fast to what he knows is good. He knows the rules and obeys them. He is courageous. He renders the type of service that a faithful man always renders so he may live in peace with himself. As a rugged individualist he did not separate himself from the herd, but became a most important part of it.

"I have never known him to be envious of any man, nor hesitate at any opportunity for charity. He loves his profession, and has fought for its ideals and for its honor and independence these many years.

"It has been a great pleasure, and great fun, too, for me to have been a shipmate with Jim as we sailed down the river of life. Were I again at the starting, and gifted with adequate foresight, I would, without hesitation, step again into the same boat."

Dr E T Wentworth of Rochester described Dr Flynn as a "Straight Shooter," saying

"Jim Flynn"—the very name strikes out, straight, sharp, straight to the point. He is a four-square, straight-shooting, fearless man of God. The truth burns from him in fiery words—words with poignancy and a sharp sting, words that cut down through the years from Chaucer and beyond—good old English words—words from the limbo of freudian familiarity with certain biological functions. Words which without benefit of printing press, script, or lexicon, have been passed on from father to son—not from mother to son—but the meaning of which is crystal clear.

"Jim's straight line is the shortest distance between two points. He is a man of action. He does things rather than talk about them.

"The most commented upon speech of the many given in the Waldorf-Astoria at the last meeting of the A.M.A. was Jim Flynn's. There, concentrated upon that stage, were the men of the hour—the Governor of the State, the Mayor of the City, the Bishop of the Diocese, the Presidents of the two largest medical organizations in the world, the Commander of the Brooklyn Jewish War Veterans. I, too, was in that audience. I heard that speech. I learned it verbatim. I remember it as an example of perfect platform oratory.

"You can't get the full effect of a speech like that, reading it in your study. You have to have heard it, you have to have seen it, you have to have felt it, you have to know it. A mystic, impending feeling—a dynamic force—pervaded the atmosphere the moment he rose from his chair and it increased as he strode toward the lectern.

"In every stride, in every fluid wave of that paunch, in every flicker of those bushy gray eyebrows, you could tell he had a mission to fulfill, and so help him God, he would fulfill it.

"The speech. Ladies and gentlemen, on behalf of the Medical Society of the State of New York, greetings." End of quotation—end of speech.

"Yet, seriously, all that he does shines with the chaste honor that would be crushed by stain as lovely virtue by ugly rape. He hates sham, he hates academic affectation and pretense, he hates professional posing and racketeers—those who dispense half-truths for whole truths, for honor is in the blood of him."

Dr Samuel J Kopetzky, of New York, president-elect of the State Medical Society, discussed "Flynn as I know him." He said

"Membership in a county society and activity in organized medicine bring a reward far beyond the scope of the activities that the individual engages in. One of the finest things that one gets in working within the ranks of organized medicine is the privilege and honor of knowing the men who are active in the profession.

"One of the things that I am very thankful for

is this opportunity which expressed itself in my acquaintance with men like Jim Flynn. For some years the rough toss and tumble of the political field within our State Society brought me to the chair of the speakership of the House of Delegates, and I found always sitting at my right during my whole term a man who quietly, unobtrusively sat there but at the right moment and in the turmoil of the House said the right and potent word to me.

"Jim Flynn has the essential element of leadership, he has initiative, he has courage, he has personality, he has tolerance for the stupid and the fool, and he has a distinct goal toward which he drives. Yet his leadership is so consummate that the effort is not seen, and the organization that he serves moves toward its appointed goal.

"Underneath all that you see of Jim Flynn there is a sterling honesty that is as refreshing as an early morn in spring. He is a fine man. I have no desire to make this talk too saccharine, but I do want to say that were Rochester many more miles from New York and I could walk or ride to get there to pay tribute to this man, I would break my neck to get there. And I am proud of the fact that I am able to serve the Society and you with Jim Flynn."

Dr Nathan B Van Etten, president of the American Medical Association, after bringing his tribute of friendship and admiration to Dr Flynn, gave the following address:

### Medical Futures

The Society is growing stronger every day—all of its programs of education are better than before. Its JOURNAL is gaining the place that it deserves. Its preparedness program has no superior, and its public relations program is applauded all over the nation.

Dr Flynn is generous to all who play the game honestly but fiercely intolerant of any effort to gain objectives by crookedness or quackery. He always works for the best interests of American medicine and I am sure that he will carry on as an indomitable force for many years to come.

Ninety-four years of fighting for the honest application of scientific knowledge to the demands of health for all people has earned the American Medical Association to the strongest position among medical organizations. Although its membership represents every shade of political complexion, partisanship has never dominated its patriotism. Its horizons extend far beyond election days. It will not sell out to political expediency. It will not sell out the idealism that has carried it through many crises.

It is preparing for the defense of Americanism against the attacks of paganism. It is preparing for maintenance of an advanced democracy unhampered by the subversive influence of foreign autocracies. It fights for the supremacy of the American way of life.

Although every type of religionist is included in its roster, it looks to all of them for loyalty to

one ideal of protection and promotion of human health. Cherishing the highest ideals of the most learned profession, it will not sell out to paganistic nihilism. It respects all religionists who are loyal to their beliefs. It believes that devotion to religious precepts is valuable and necessary relief for the loneliness of individualism.

Serving every social level it sympathizes warmly with all who are physically or mentally unfortunate.

Although its membership represents the descendants of every race, its fundamental interests are American. Recognizing the cosmopolitan character of a nation built from its beginnings by refugees from persecutions and intolerances, its hospitality has been continuously generous toward the mental and religious attitudes of the more recent seekers for freedom in our country. Although it respects the natural affection of newcomers for the traditions under which their life patterns have been formed, it believes that all should adapt themselves as soon as possible to national programs which have evolved the American way of life and that all should cooperate in its growth and improvement.

Although the American Medical Association may be justified in pride of accomplishment, it is not prejudiced against any earnest approach to new solutions of administrative or scientific problems. It insists upon complete and honest analyses of all new proposals before accepting and endorsing them.

It welcomes the restless spirit of scientific adventure and encourages it. It has spent more than a million dollars in research in the last twenty-five years. At the same time, however, it has been inflexible in its disapproval of those who would profit from the credulity of ignorance. It has never sold out to commercialism. It believes that Americanism is worthwhile. It cherishes the ideals of orderly democracy. It despises the devious ways of disloyal propagandists not only in the field of medical service but in civic life. It is conscious of the campaign of German sabotage which has been carried on with diplomatic immunity since 1915. It remembers the efforts of the brilliant Count Von Bernsdorf to seduce the Wilson administration and the violent sabotage of Von Papen and Captain Boy-ed, the same Von Papen now operating in Turkey. It knows that the same things are going on here at this moment. It knows that Russian communism and German socialism have been active here for many years.

It knows that the infiltration of foreign thought has fermented discontent in this country, so that some Americans have been led into disloyalty and are now working for the destruction of our democracy. It knows that American generosity has been so grossly abused that world revolution is being promoted.

The health program of the American Medical Association is an evolutionary development which fortunately escaped in large measure the acquisitive eye of the log-rolling politician until

the last few years, when job seekers, awakening to the possibilities of expanding bureaucracies, began stimulating the superficial humanitarianisms of political leaders.

As a consequence, the problem of the future health of all our people is being attacked by amateur philosophers who know nothing about the personal practice of medicine and who know about mass medicine only from superficial observation of foreign systems, none of which have improved the quality of medical service or have produced anything superior to our present system in the United States in 1940.

No one claims perfection for our system of delivery of medical service, but all of you know that the American Medical Association has been working for ninety-four years to improve it, that its chief concern is better health for all our people, and that nowhere on earth have better results been attained.

We have good reason to be proud of the fact that the science of medicine has steadily advanced the health of the American people and that, so far, the legal establishment of any of the foreign systems has been successfully resisted.

In spite of the undisputed fact that American health statistics are unsurpassed, the position of the physician in American society has become increasingly difficult because political theorists in social science have formed pressure groups whose object is to force legislative action to promote governmental control of medical service. Government in medicine, like the government in business, is just another step from democracy toward totalitarianism.

The thought of dictatorship in America is revolting. And yet, appeals to popular emotion under the aegis of patriotism, of social security, of pensions, of welfare, of relief, of unemployment, or of the people's health have carried many people from confidence in their ability to take care of themselves to belief that they have no personal responsibility for providing the sources of paternalism they expect to enjoy. They believe that they will drink forever from the inexhaustible wellsprings of government.

Dictatorships have been built on such public sentiment. If such sentiments prevail, the medical profession may well expect a fate similar to that which developed in Germany and reduced German physicians, as well as the German people, to economic slavery.

The physicians of the United States have made history. Campaigns against tuberculosis and diphtheria and pneumonia and syphilis have changed the health statistics of the nation to figures that could not have been predicted twenty years ago.

We know that an intelligent medical profession can educate the people in personal and community health. We know that education has been largely responsible for lowering the statistics of tuberculosis. We know that diphtheria can be entirely eradicated if the people will have enough intelligence to listen to the advice of the

doctor and immunize every child. We know that smallpox can be entirely eliminated by universal vaccination. We know that great gains have been made during the campaign against syphilis started by General Parran. We are confident that studies of immunology will salvage more and more people from the ravages of communicable disease.

These have been great years in the warfare of science, and, because our frontiers have been so remarkably advanced, we might be justified in predicting greater triumphs if the future of our civilization were not threatened by social upheavals, the violence of which cannot be foreseen.

The European war has passed its first anniversary, and a year of valuable time has been wasted in debating, so that we are just now only at the beginning of our preparations for our own defense. Our medical preparedness should have begun to function immediately after our offer to the government in September, 1939. Always, muddling politics restrain patriotism. Now, at the request of the War Department in June, the American Medical Association is actively helping in military preparations.

Questionnaires have been sent to all physicians to discover how willing, how qualified, and how loyal they may be. The immediate response of more than 134,000 physicians justifies the traditional devotion of the medical profession to public service. The Committee on Preparedness is building the skeletal fabric for effective service in every state not only for active field service but for service on draft boards and for protection of civilians at home. The profession will be ready when called for.

Meanwhile there must be no relaxation of educational standards in the quality of medical care for our country of the future.

Our medical future should be viewed from high points of idealism, standing upon firm, well-established, biologic foundations. Those who wish to see the highest national health might well work for a selective draft of all our citizens to choose those who may become the parents of future Americans.

Physical fitness must be recognized as an important step toward national fitness. Fifty-two per cent of Americans are said to be physically competent for hard work. This level must be raised if our medical futures are to be viewed with satisfaction.

I believe that educators should be urged to turn their minds from sentimental to practical methods of equipping youth for the hard realities of life.

I believe that all boys and girls who are physically fit should be vigorously trained from the ages of 5 to 20 not to carry guns or to engage in military techniques but to develop strong healthy bodies that will not only be able to meet emergencies of our national life but will build sturdy competent citizens.

The athlete has been idealized to the extent that many thousands of us spend many hours of

many days exercising vicariously, sitting in stadia screaming our approval but making no effort to maintain our own general efficiency.

Annual examinations of the apparently healthy have long been advocated with very small results. Examinations of school children are carefully done in few places. I do not favor peace-time conscription for military service, but I do advocate careful annual examination of every school child and training for physical fitness throughout school life. I believe that such universal study of the school child, added to promotion of health through intelligent nutrition and sanitary housing, is a more important elemental defense than guns or planes or tanks.

While the common effort in our educational system seeks its objective in a thin veneer of so-called general culture, average abilities for the practicalities of life are neglected. Fear of regimentation seems to restrain school administrators and limits their vision or understanding of the destructive experiences of indulgent self-expression, which seems at this moment to be resulting in a disorderly generation.

Physical training of the physically fit and rehabilitation of the physically unfit are largely the lot or miss concern of undirected individuals. Every school and college in the country should be provided with serious medical consultants who in turn should be educated and inspired promoters of national health.

If every college for women or men would emulate, for the next twenty years, the physical training now carried on at West Point, we should have thousands of young people physically fit for healthy citizenship and prepared to meet emergencies at home or abroad. We should have many thousands of young people so physically fit that they would be willing to soil their white collars and their strong hands with the work of the World.

For many years we have been discussing ways and means of preparing for solution of our internal warfare between employee and employer, and still we have more than nine million unemployed. No one seems to know how many of these are physically, morally, or mentally unfit or unadjustable to possible demands for their services, but it may be safely assumed on the basis of studies of other groups that more than 30 per cent or more than three millions of them are physically unfit and many more unskilled for work that might be offered them in more prosperous seasons.

The President of the United States has said that Americans are soft. He also said that "if we are to survive we cannot be soft in a World in which there are dangers—dangers which threaten America—dangers more deadly than were those the pioneers had to face."

He also wisely said that old pioneers "put hard fiber in the American spirit and strong muscles in the American back."

The selective draft for the war of 1917 and 1918 revealed that from 30 to 40 per cent of those

examined were unfit to fight. Have we Americans profited from the lessons of that experience? Statistics of June, 1940, indicate that we have not.

Defects found in applicants for voluntary enlistment in the Regular Army, month of June, 1940, Second Corps Area, New York City, Colonel Magruder, Lieutenant Drummond

Examined	2,313
Rejected	762 or 31 2%
Passed	1,551

Dr Kopetzky thinks that our statistics will be much better in the current conscription.

We are boastful of our great schools and colleges, of our greatly increased literacy, of our vast numbers of college students. We have idealized the life of those in the learned professions.

We have educated so many people to wear white collars that there are not enough people who are fit for the skilled mechanical work that we need so much at this time. We have stimulated a false pride in the attainment of college degrees and dislocated labor by crowding some fields while others are poorly supplied. We have encouraged a complacent snobbery that looks down its nose at productive labor. We have forgotten to teach that healthy existence is built upon practical foundations, and we have paid so little attention to physical fitness that we shall have to draft 3,000,000 men for military service if we shall secure 2,000,000 men and probably proportionately the same number of women for the defensive jobs that can be served by women.

Our mental unfitness is illustrated by 500,000 hospital beds occupied by the institutionalized insane.

Our social unfitness is illustrated by a half million active syphilitics and a half million migrating indigents—15 per cent of whom are said to have open tuberculosis. This is indeed a serious indictment of American civilization.

In medical education most of the current writing and thinking has been in the interest of the development of specialists. Here again practicalities are forgotten. I believe a national health program would be promoted by the concentration of medical education upon developing good average physicians for average patients. And I believe that the young doctor of today comes too late into the field of practical service.

May I say in brief detail that I believe that much could be gained by permitting those who aspire to practice medicine to elect basic science study at the end of the second year of high school and continue a concentrated study of the sciences through two years of college, at which time they should be given a B S degree, and then go into medical schools where without a repetitious work they should be immediately introduced to a four-year course of clinical medicine.

I believe that these students should be well educated in internal medicine, obstetrics and traumatology and minor surgery, in physical therapy, and in a basic knowledge of the needs of the public health.

The education of interns should also be a serious drilling in practical clinical experience, and the young physician might thereby find himself in practice two or three years earlier than he is today, in his best years, when he may learn how to live and to become a useful, self-supporting independent citizen. This would in no sense let down the standards of competency of the average physician to care for the average patient. It would in no sense lessen the opportunity for specialization, and specialists could and would develop themselves to attain the high standards of the specialist hoards if that system of certification should continue to be thought advisable.

Medical horizons in America will not be reached until every American shall have available a good physician competent to take care of all of his ordinary physical accidents.

Medical futures will not become highly illuminated unless all physicians, specialists as well as general practitioners, shall be continuously educated. So long as he lives, graduate education must be carried to the doctor.

The specialist is often able to go to school at frequent intervals for refresher courses or for lessons in technique, but the general practitioner is more likely to be limited in his freedom from his practice, and graduate education for the benefit of the average patient must be a painstaking part of any national health program.

Hospital facilities will grow to meet the needs of all our people, and, if the present interest in transportation prevails, good roads will run to every physical frontier. In the state of New York good roads have brought every citizen within thirty minutes of a physician.

Statistically, the health of the American people measures up to higher standards than are found in any other large nation, two nations only, Australia and New Zealand, have lower death rates, but these figures do not satisfy a profession that aims still higher.

Postgraduate courses conducted by medical societies and organized clinical groups are not entertainments for doctors enjoying brief vacations, they are serious efforts to support the intelligent clinical knowledge of practicing physicians and to carry American medicine to higher ideals of public service.

In advocating a new health program I believe that a National Health Department with a Secretary of Health in the Cabinet is as important as a War Department with a Secretary of War.

Defense against disease is as important as defense against a military enemy. Defense of the nation's health is vital to all other defensive forces, but any defensive program will fail to reach its objective unless it is supported by a vigorous offensive which will arouse the public conscience.

Health means so little to most people until it fails or is lost that the first emphasis is on curative therapy, second on prevention (which attracts minor attention except when given to the prevention of the communicable diseases of

children), and last and very little emphasis on the promotion of physical fitness through good nutrition, good housing, and physical training

I believe in eliminating the present confusions and duplications of Washington bureaus by centralizing national health functions, which now seems functionally possible under the leadership of the Social Security Administrator, the Honorable Paul McNutt

I believe in decentralizing the care of the sick individual by originating his care in the smallest political subdivision such as a school district, where his real condition is known, and then carrying his necessary call for help to the township, to the county, and to the state in that order, but to the National Government as infrequently as possible

The future of medicine in America is intimately involved in the evolution of our national intelligence.

Our National Government can coordinate nationwide programs and our local governments can carry them to successful accomplishment

Sickness and health are individual experiences that have community importance

Our medical futures are limited by the mental, moral, and physical fitness of every American.

**Presentation of Award.** Dr Kaiser concluded the proceedings with these words

"I am very happy that the last act that I am called upon to perform as president of the Monroe County Medical Society is one in which I can extend my personal appreciation to Dr Flynn and particularly to extend to him in a small way a tribute from the Medical Society of the County of Monroe

"We have already heard from members of our local group, from the state group, and from the national group. There is very little I could add, and it is a matter of considerable pleasure to me to be able to present to Dr Flynn this tribute of recognition from the Medical Society of the County of Monroe. It is merely a token, but it does represent our appreciation for your own accomplishment and also for the honor that you have brought to our society."

**Response by Dr Flynn**

"My friends. This expression is not the boneliness—it is the real McCoy. Everyone here to-

night has sacrificed something, some more than others, so this means real friendship

"This testimonial dinner has been an enjoyable surprise. I am thoroughly conscious of the fact that in honoring me you are honoring the State Medical Society and organized medicine in general. And this is as it should be, because medical organization has given us as individuals the privileges that we are accorded by the public today and the position that we hold in the community

"It is up to each and every one of us to follow closely the doctrines of organized medicine and adhere especially to the code of ethics. If we do this, we will continue to be worthy of the confidence of the public

"I am deeply appreciative of the kind talks made by the speakers this evening, of the wonderful work performed by the committee on arrangements and by each and every one here present, for you all have helped to make this testimonial dinner a real success

"May I thank you wholeheartedly and wish you a pleasant good-night."

Mr Samuel B Dicker, mayor of Rochester, was then introduced

"I think I learned something by coming here tonight, because I learned how Dr Flynn addresses an audience in short, terse words. If I could get away with that, I could live in peace and harmony with myself

"I am very happy to have been able to come here tonight and greet you here at this testimonial dinner to our good citizen, Dr Flynn. We in Rochester are fond of our city. When one Rochesterian died and went to heaven and wanted to pass the gates, he was asked whence he came, and he said, 'From Rochester, New York.' And St Peter said, 'Well, I don't think you will like it up here.'

"We are proud of Rochester, but we are proud chiefly of the character and citizenship represented by our good friend, Dr Flynn. I have known Dr Flynn for many years, and we are very happy that Rochester has been honored to have one of its distinguished scientists and citizens selected to lead the Medical Society of the State of New York. I know that Rochester's name will go forward because of the work of Dr Flynn in this state and throughout the nation."

## County News

### Albany County

The county society elected the following officers on December 11: president, Dr Thomas O Gamble, of Albany; vice-president, Dr John J Phelan, of Albany; secretary, Dr Homer L Nelms, of Albany; treasurer, Dr Frances E Vosburgh, of Albany; historian, Dr Charles K. Winne, Jr, of Albany; censors, Drs Philip L Forster, Arthur J Wallingford, John B Horner, Raymond G Leddy, of Albany, and Dr John F Mosher, of Coeymans; delegates, Drs William B Cornell, of Menands, Otto A. Faust, of Albany, and Raymond F Kircher, of Albany, alter-

nates, Drs Emerson C Kelly, Charles A. Perry, and William Feltman, of Albany

### Bronx County

Dr J Lewis Amster, former health commissioner and surgeon, has been appointed president of the medical board of Morrisania Hospital to succeed Dr Nathan B Van Etten, now president of the American Medical Association.

Matthew Woll, vice-president of the American Federation of Labor, addressed the county society on December 18, on the urgent necessity

of health examinations for draftees and industrial workers

### Cayuga County

The annual dinner of the county society and the woman's auxiliary was held on December 19 at the Osborne Hotel in Auburn. Justice Benn Kenyon spoke on "Medicine and Law."

### Chautauqua County

The county society held its annual meeting with election of officers at White Inn in Fredonia on December 18. Dr Ernest J Kelley, Jr., of Jamestown was elected president and Dr Benjamin S Custer, of Fredonia, vice-president. Dr Edgar Bieber, of Dunkirk, was re-elected secretary and Dr Frederick J Pfisterer, of Dunkirk, treasurer.

Dr J Sutton Regen, of Buffalo, gave a talk on the diagnosis and treatment of vascular diseases. Dinner followed the meeting.

### Chemung County

The county society has requested that \$10,000 be included in the 1941 budget in Elmira to pay physicians for attending relief patients in the hospitals, and the City Council has deferred action to determine if other cities pay for such service.

### Chenango County

At its annual winter meeting at the Norwich Club on December 10 the county society elected Dr Leshe T Kinney, of Norwich, president, Dr Ben Lee Dodge, of Bainbridge, vice-president, Dr J H Stewart, of Norwich, secretary-treasurer, and Dr Matt Boname, of Oxford, censor. Dr Stewart has served the society as secretary-treasurer for over twenty years.

Dr A K Benedict, of Sherburne, was named delegate to the State Society meeting with Dr J Mott Crumb, of South Otselic, alternate.

At the afternoon session Dr John F Kelly, of Utica, explained the "Medical and Surgical Care Plan," and a committee, composed of Drs Kinney, of Norwich, Evans, of Guilford, Stewart and G L Manley, of Norwich, was appointed to consider and report.

Dr Charles D Post, of Syracuse, presented a paper on "Nephritis," and at the joint luncheon with Norwich Rotary discussed the work of the medical profession in relation to national defense registrants.

### Dutchess County

The county society met at the Amrita Club in Poughkeepsie on December 11, and Dr Walter D Ludlum, Jr., New York City, gave a paper on "Recognition and Treatment of Hernia."

### Erie County

The county society elected the following officers at the annual meeting on December 16: president, Dr Nelson W Strohm, first vice-president, Dr Harvey P Hoffman, second vice-president, Dr Harold F R. Brown, secretary, Dr Louise W Beamis-Hood, treasurer, Dr Roy L Scott, all of Buffalo. Elected to the Board of Censors are Drs Joseph D Godfrey, Buffalo, Elmer T McGroder, Buffalo, Warren S Smith, Kenmore, Roswell K Brown, Buffalo, and Charles W Bethune, Buffalo.

Dr Herbert E Wells in his address as retiring president deplored the influence of politics in the defeat of the society's welfare medical plan by the board of supervisors. He said "Our main object in urging the plan, even with its inadequate provisions for reimbursing physicians in Buffalo for home-call service, was the establishment of the principle enabling the indigent sick to call their own physicians."

### Fulton County

The county society held its annual Christmas dinner on December 18 at the Hotel Johnstown. There were forty-two members and their wives present.

### Herkimer County

The county society will remit dues of any member who enters military service, it was decided at the annual meeting at the Mohawk Valley Country Club on December 10, when Dr H. Dan Vickers, Little Falls, was elected president to succeed Dr George Frank, of Frankfort. Dr Frank discussed socialized medicine in his address as retiring president.

The organization voted to complete furnishing the medical society room in the County Historical Building, provided under the will of Dr A. Walter Suiter.

Other officers elected were: first vice-president, Dr B G Shults, Herkimer, second vice-president, Dr N D Lill, Dolgeville, third vice-president, Dr D F Aloisio, Herkimer, secretary, Dr Fred C Sabin, Little Falls, treasurer, Dr A L Fagan, Herkimer, librarian, Dr G S Eveleth, Little Falls, censors, Drs G A Burgin, Little Falls, Harold F Buckbee, Dolgeville, James F Gallo, Herkimer, H J Sheffield, Frankfort, and Dr F S Conterman, Ilion.

Dr Burgin was named delegate to the State Society meeting, with Dr Shults as alternate.

County physicians should have a voice in the selection of the doctor for county welfare work, Dr F H Moore, retiring president of the Herkimer Academy of Medicine, declared in his address at the academy session in the Palmer House on December 17. At the scientific session, Dr B G Shults read a paper on "Complications of Diabetes," with discussion led by Dr Robert Dennis, who also showed films on traumatic injury.

### Kings County

The topics and speakers at the scientific session of the county society on December 17 were "Current Concepts of the Nature of Rheumatic Fever," by Dr Irving Graef, and "Management of Rheumatic Infection," by Dr Cary Eggleston, both of New York City.

The friends of Dr Maurice J Dattelbaum, the incoming president of the county society, are arranging a dinner in his honor to be held January 28, at the Towers Hotel, 7 30 p m. Tickets are \$4.00 per person and may be obtained from Dr Abraham Koplowitz, 1401 President Street, or from the committee. Make checks payable to Dinner Committee.

The forty-second annual meeting of the Associated Physicians of Long Island will be held in Brooklyn on January 25. The scientific session

will be at St Catherine's Hospital. The program will be provided by the staff. In the morning there will be clinics. The members of the Association will be guests of the hospital at luncheon. At 2 00 P. M. a number of brief papers will be presented followed by the usual interesting discussion. At the executive session, immediately following, election of members and officers for 1941 will take place.

The annual dinner will be held at 6 30 P. M. at the Hotel Bossert and it will be a steak dinner, tickets, \$3 50. An interesting and entertaining after-dinner speaker will be provided by the Entertainment Committee.

Dr Alex Louria succeeds Dr Charles Goldman as president of the Williamsburg Medical Society. He was elected on December 9 at the thirty-fourth annual meeting held in the Leon Louria Memorial Auditorium of the Jewish Hospital.

Elected to serve with Dr Louria were Dr David A. Meiselas, first vice-president, Dr Abraham Ravich, second vice-president, and Dr Bernard Seligman, secretary-treasurer.

Dr Jack London was elected president of the South Brooklyn Medical Society at a meeting at the Baltic Street Health Center, on December 14. Other officers elected were Dr Charles Bastable, vice-president, and Dr Julius Schlein, treasurer.

The society is participating with the Department of Health, the Kings County Medical Society, and the Brooklyn Tuberculosis and Health Association in a drive to check tuberculosis in South Brooklyn, Red Hook, and Gowanus.

Dr Daniel A. McAteer, president of the county society, was one of the principal speakers at the dedication of the new five-story Fort Greene Health Center and Brooklyn Borough office of the Department of Health on December 19 in the auditorium of the new building at Flatbush Avenue Ext. and Fleet and Willoughby streets.

#### Livingston County

The annual meeting of the county society was held on December 12, at the Hotel Dansville, and officers were elected as follows: president, Dr Kenneth T. Rowe, Dansville, vice-president, Dr Alden J. Townsend, Dansville, secretary-treasurer, Dr Gerald E. Murphy, Mt. Morris, delegate, Dr Charles Gullo, Mt. Morris, alternate, Dr Gerald E. Murphy, Mt. Morris, censors, Drs Gerald B. Manley, Geneseo, Harold F. Hulbert, Dansville, Wm. T. Shanahan, Son-Yea, Gerald E. Murphy, Mt. Morris, and Charles L. Newton, Geneseo.

Dr George M. Doolittle of Craig Colony, Son-Yea, retiring president, gave an interesting and instructive paper on "Convulsive Disorders."

#### Montgomery County

The annual dinner meeting of the county society was held December 11 at the Elks Club in Amsterdam. The retiring president, Dr S. L. Homrighouse, expressed his thanks to the members for their cooperation during the year and stated that death had removed two of the most prominent members of the society whose names would not soon be forgotten, Dr Charles Stover and Dr H. M. Hicks, and that the society suffered another irreparable loss in the recent death of Dr Clark E. Congdon, of Fort Plain.

The annual election of officers resulted as follows: president, Dr Julius Schiller, vice-president, Dr James M. Bernhard, secretary, Dr Roger Conant, and treasurer, Dr Leonard M. McGuigan.

Dr E. H. Ormsby was elected delegate to the State Society and Dr J. A. Dickson delegate to the Fourth District Branch. Dr W. H. Seward was re-elected censor.

#### Nassau County

In an effort to give high-school students more knowledge about cancer, the Nassau County Cancer Committee has been conducting educational work in the secondary schools of the county. It is hoped that thereby these students will have a much more sensible attitude toward cancer and not the fear that the present generation has of this disease. Secondly, a few cases of cancer have been discovered as a result of these talks when students have spoken to parents or relatives urging them to seek medical attention for a condition that has existed too long or been neglected.

#### New York County

The program at the meeting of the county society on December 23 was as follows: (1) "Medical Preparedness in the Navy," by Captain Earl C. White, Medical Corps, U. S. Navy, by invitation, and (2) "The Medical Department of the Expanded Army," by Colonel Frank W. Weed, Medical Corps, United States Army, by invitation. They were discussed by Colonel Samuel J. Kopetzky, Medical Reserve Corps, U. S. Army.

#### Niagara County

At the annual meeting of the county society on December 10 the following officers were elected: president, Dr Raymond S. Barry, Niagara Falls, vice-president, Dr Forrest W. Barry, Lockport, secretary, Dr Charles M. Dake, Niagara Falls, treasurer, Dr Dudley B. Fitzgerald, Lockport, delegates to State Convention, Drs Guy S. Philbrick and Richard H. Sherwood, Niagara Falls, alternates, Drs Robert P. Reagan, North Tonawanda, and Harley U. Cramer, Lockport, censors, Drs Robert R. B. Fitzgerald, Lockport, Roy H. Wixson, Niagara Falls, and Emil T. Mueller, North Tonawanda.

#### Oneida County

The speaker at the meeting of the county society on December 19 in Hotel Utica was Dr Alfred W. Adson, of the Mayo Clinic, Rochester, Minnesota. He read a paper on "Sympathectomy as a Therapeutic Measure." The subject was discussed by Dr Frederick F. Wetherell, of Syracuse.

Sharing the speaking program was Dr T. Wood Clarke, who spoke on "The Allergic Abdomen." Dr R. E. Vandever, of Rome, discussed the topic.

#### Onondaga County

An institute on radiology will be held at the Syracuse University College of Medicine on Saturday, January 18, presented under the auspices of the Central New York Roentgen Ray Society, the Medical Society of the State of New York, Syracuse University College of Medicine.

and the Division of Cancer Control of the New York State Department of Health

Speakers at the afternoon session will include Dr Albert Lenz, president, Central New York Roentgen Ray Society, Dr James M Flynn, president, Medical Society of the State of New York, Dr Herman G Weiskotten, dean, Syracuse University College of Medicine, Edith H Qumby, Sc D, associate physicist, Memorial Hospital, New York City, Dr Merrill C Sosman, roentgenologist, Peter Bent Brigham Hospital, Boston, Dr Ursus V Portmann, radiation therapist, Cleveland Clinic, Cleveland, Dr Fred W Stewart, pathologist, Memorial Hospital, New York City, Dr Stafford L Warren, chief radiologist, Strong Memorial Hospital, Rochester, New York, Dr Louis C Kress, director, Division of Cancer Control, New York State Department of Health

The speaker at the dinner meeting in the evening at the Hotel Syracuse will be Dr R. R. Spencer, assistant chief, National Cancer Institute, United States Public Health Service

Under sponsorship of the county society, twenty-five Onondaga County physicians, who are medical examiners of Selective Service Board met in December, to request that draft board examiners be paid on the same basis as the civilian physicians attached to induction boards

Draft board examiners work without fee, giving their services Properly to examine a registrant requires about one-half hour, and with fifty draftees to be called early in January, physicians who are attached to draft boards find their own schedules interfered with, especially as there are usually more men to be examined, by one-third than the quota to be provided from the district

Onondaga County physicians will ask a fee of \$1 00 per draftee, which is \$2 00 an hour, or about \$15 a day at that rate

In a number of districts in the state, examining physicians have been reported as resigning because the draft work interfered with their private practice

#### Orange County

Dr Ross Schmitt, Middletown, was elected president of the county society at a meeting in the Palatine Hotel in Newburgh on December 10

Other new officers are vice-president, Dr George Dempsey, Cornwall, secretary-treasurer, Dr E C Waterbury, Newburgh, delegate to State Society, Dr M D Stivers, Middletown, delegate to First District Branch, Dr W J Hicks, Middletown

A portrait of Dr David R. Arnell, one of the founders of the American Medical Society in 1806 and its president from 1809-1811, was presented to the organization by Dr C E Townsend, of Newburgh

#### Otsego County

At the annual meeting of the county society on December 11, the following officers were elected president, Dr Charles C McCoy, Cooperstown, vice-president, Dr Frederick B Devitt, Oneonta, secretary, Dr Edmund H Kerper, Oneonta, treasurer, Dr Frederick E Bolt, Worcester, censor, Dr Earle C Winsor, Schenectady, delegate, Dr James Greenough, Oneonta, and alternate delegate, Dr Edwin P Hall, Oneonta.

#### Rensselaer County

The following officers were elected by the county society on December 10 president, Dr John O Sibbald, vice-president, Dr Alson J Hull, secretary, Dr Elizabeth Palmer, and treasurer, Dr Francis J Fagan, all of Troy The censors are Dr William Trotter, Troy, and Dr Charles H Sproat, Valley Falls, delegates, Drs Stephen H Curtis and John D Carroll, both of Troy, and alternates, Drs Clement J Handron and George F Reed, both of Troy

The officers were installed at the annual banquet of the society at the Hendrick Hudson Hotel on December 11 Dr Alan R. Moritz, professor of legal medicine at the Harvard Medical School, spoke on medicolegal jurisprudence, and Dr Peter Irving, executive secretary of the State Society, discussed society activities and spoke on the need for increasing the number of physicians serving in connection with local draft boards in view of the anticipated increase in the work load in the coming months

#### Richmond County

At the annual meeting of the county society on December 11, the following officers were re-elected president, Dr Herbert A Cochrane, New Brighton, vice-president, Dr H Lynn Halbert, Tompkinsville, secretary, Dr George W McCormick, Port Richmond, treasurer, Dr Curtis J Becker, St George, and censors Dr Frederick Cooney, St George, Dr Andrew J McGowan, New Brighton, Dr Nathanael Fedde, Annadale

#### St. Lawrence County

Dr Charles Dean Laidlaw, of Canton, who died on December 13, at the age of 62, was a past-president of the county society

#### Schenectady County

The county society met at the Mohawk Golf Club on December 12 and elected the following officers president, Dr Charles E Wiedenman, vice-president, Dr Jos H Cornell, treasurer, Dr Raymond H Warner, secretary, Dr Gomer Richards, and censors, Drs Arnaldo A. Samorini, D Glen Smith, William F Nealon, all of Schenectady Dr Sullivan was elected to the house of delegates of the State Society The alternate is Dr Charles Rourke Delegate to the Fourth District Branch is Dr Beverly Vosburgh, and the alternate is Dr C L Moravec

#### Seneca County

The new officers of the county society are as follows president, Dr Arthur F Baldwin, Waterloo, vice-president, Dr Floyd W Hoffman, Romulus (Dr Hoffman has been called for military service), secretary-treasurer, Dr Duane B Walker, Waterloo, delegate to the State Society, Dr Arthur F Baldwin, and delegate to the Seventh District Branch, Dr Joseph E Allen, Seneca Falls

#### Tompkins County

Dr Dean F Smiley was elected president of the county society at the annual meeting at the home of Dr Esther Parker near Jacksonville on December 16

Other officers elected were vice-president, Dr Henry W Ferris, secretary-treasurer, Dr

Willets Wilson, and censors, Drs Richmond Douglass, Arthur B Berresford, Leo P Larkin, Henry B Sutton, and Henry E Merriam.

Approximately seventy physicians and their wives attended the meeting and a dinner at the Jacksonville Methodist Church which preceded it

Romeyn Berry, of Jacksonville, columnist for *The Ithaca Journal*, gave a talk at the meeting, and Cornell football pictures were shown by Mose Quinn, freshman coach at Cornell.

#### Yates County

The annual meeting of the county society was held at the Benham Hotel in Penn Yan on December 12 The following officers were elected for the coming year Dr A S Jones, Dundee, president, Dr W G Roberts, Penn Yan, vice-president, and Dr R F Lewis, Penn Yan, secretary and treasurer

The society unanimously passed resolutions to protect the interests of physicians called to national service.

### Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
Janette Baldwin	68	Cornell	December 17	Brooklyn
Arthur R. Brennan	44	Baylor	December 11	Brooklyn
Morris Fallick	76	N Y Eclectic	November 13	Bronx
Charles S Goodwin	66	N Y Univ	December 9	Syracuse
Charles D Laudlaw	62	Syracuse	December 13	Canton
Richard H. McCarty	75	Albany	November 16	Saratoga Springs
Thomas F McNamara	73	Buffalo	December 25	Rochester
George J Mehler	—	P & S N Y	December 26	Jackson Heights
Benjamin P Riley	70	Univ Virginia	December 21	Manhattan
Robert P Wadhams	61	Univ & Bell	December 16	Manhattan

### SERVING ON COMMITTEES

Serving on a committee of a county medical society is a task which should be taken seriously or the appointment not accepted at all, says an editorial in the *Milwaukee Times* which is being widely quoted in the medical press This premise takes for granted that the committee appointed has something to do and has not been created merely to give some physicians an assignment

Each committee member is under an obligation to serve faithfully and contribute something of real worth to his organization Many do not realize this and are perfectly willing to let one or two members on the committee do all the planning and the work that is necessary Are you that kind of a committeeman?

It might be interesting to consider the ideal member of a committee What are his qualifications and how does he meet his responsibilities?

First, he should have the interest of the medical profession at heart This may seem a platitude, however, the physician who fulfills this qualification is rarer than is generally thought, for he must often submerge his personal feelings to aid in the accomplishment of what is best for the profession

Second, he will give thought and study to the subjects which come up before the committee and will not just be one of those present It is surprising how few people will assume responsibility or feel their obligation to do more than is absolutely demanded of them No committee can do much on behalf of the profession which is not made up of members who are genuinely interested in the tasks to which they have been assigned and are willing to give the time necessary to put through the plans they have evolved.

Third, he will make it a point to be on hand

for all meetings unless his professional duties require him elsewhere. So many physicians accept committee appointments and fail to attend. These are often practitioners who for some time have felt that they deserve appointment to a committee

Nothing is so demoralizing to a committee as to have two or three out of ten or fifteen members present There is no quorum, therefore, no action can be taken. Those on hand become discouraged and unless interest is somehow stimulated they also drop out and the committee becomes dormant

Fourth, he will not allow one or two members to assume entire burden for developing plans but will contribute ideas of his own. It is easy to find fault and not contribute oneself Unless the physician has worthwhile contributions to make to the committee, he should not serve on one This does not mean that he must be in agreement with other members of the committee, but when a thorough discussion has been held the majority opinion should rule and he should subscribe to it

Fifth, he will do what he can to contribute toward an orderly and not overlong meeting Many committee members take up time with unnecessarily long discussions of unimportant details or, if the subject is of importance, too much time discussing it. Nothing is so discouraging to a committee as long and tiresome sessions

Committees can do much to improve the efficiency of medical societies because most of the planning is in their hands Their personnel, however, should be carefully selected from among those men who will meet the qualifications here described Only then can they justify their existence

INSTITUTE ON RADIOLOGY  
Syracuse University College of Medicine  
Syracuse, New York

Saturday, January 18, 1941

Presented under the auspices of Central New York Roentgen Ray Society; Medical Society of the State of New York, Syracuse University College of Medicine, Division of Cancer Control of the New York State Department of Health

PROGRAM

January 18, 1941

Syracuse University College of Medicine, Syracuse

Meeting called to order at 1 30 p m by

Albert Lenz, M D, President

Central New York Roentgen Ray Society

Opening Remarks

James M Flynn, M D, President

Medical Society of the State of New York

Chairman of the Meeting

Herman G Weiskotten, M D, Dean

Syracuse University College of Medicine

- 1 45 p m "Physics of Radiation for the Radiologist"  
Edith H Quimby, Sc D, Associate Physicist  
Memorial Hospital, New York City
- 2 30 p m "Roentgenological Aspects of Brain Tumors, Diagnosis and Treatment"  
Merrill C Sosman, M D, Roentgenologist  
Peter Bent Brigham Hospital, Boston, Mass
- 3 15 p m "Indications and Results of Roentgen Therapy"  
Ursus V Portmann, M D, Radiation Therapist  
Cleveland Clinic, Cleveland, Ohio
- 4 00 p m "Radiosensitivity of Tumors"  
Fred W Stewart, M D, Pathologist  
Memorial Hospital, New York City
- 4 45 p m "The Cyclotron"  
Stafford L. Warren, M D, Chief Radiologist  
Strong Memorial Hospital, Rochester, New York
- Discussion conducted by Louis C Kress, M D, Director Division of Cancer Control,  
New York State Department of Health

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DINNER MEETING (Informal)

7 00 p m Small Ballroom, Hotel Syracuse, Syracuse, New York

Toastmaster—James M Flynn, M D

Introduction of Speaker by

Edward S Godfrey, Jr, M D, Commissioner

New York State Department of Health

Speaker

R R Spencer, M D, Assistant Chief, National Cancer Institute, United States Public Health Service

Local Committee on Arrangements

Carlton F Potter, M D, Chairman

Donald S Childs, M D, Lucas S Henry, M D, Foster C Rulison, M D

While the Institute is planned especially for radiologists, all physicians in the state are cordially invited to attend. The price of the dinner is \$2 00 No other fees will be charged The sponsoring agencies are very anxious to know how many plan to attend the afternoon session and how many will be at the dinner Reservations should be addressed to

O W H Mitchell, M D, Chairman

Council Committee on Public Health and Education

Medical Society of the State of New York  
428 Greenwood Place, Syracuse, New York

# Woman's Auxiliary

## To the Medical Society of the State of New York

**A**S CHAIRMAN of the State Organization I should like to emphasize the need of every doctor's wife in the state becoming a member. No organization can do its best work unless there is a complete membership, each member shouldering her part. Even with a little over one-third of the state organized there has been a great deal accomplished in public health education and in promoting a greater feeling of unity and responsibility. In the already organized counties the medical societies find the auxiliaries have helped a great deal in many ways. With the splendid work now being done, the help of the unorganized counties is needed in order that even more and better things may be accomplished in the future—Florence M. Johnson, chairman of the State Organization (Mrs. R. F.)

### County News

**Cayuga.** The regular monthly meeting of the auxiliary was held at the Auburn City Hospital Nurses' Home. Dr. Frederick Beck, of Biggs Memorial Hospital, was the guest speaker. A social hour was enjoyed by those present.

**Fulton County.** Twenty-four members of the auxiliary met December 17 at the home of Mrs. H. C. Hageman, Highland Terrace, and enjoyed a Christmas party. A report on work done for the Red Cross was given by Mrs. H. B. Riggs. Members did work for Bundles for Britain. Miss Dorothea Ehle entertained with piano numbers and gifts were exchanged. Mrs. Claude Bledsoe and Mrs. Everett Perkins assisted the hostess.

**Jefferson County.** The auxiliary held a dinner meeting at the Black River Valley Club on December 12. After the dinner sewing for the Red Cross was done. Several members are heading committees and helping at Red Cross Headquarters. For January it is hoped to have a speaker talk on National Medical Preparedness and to have the superintendent of a local hospital explain the hospital situation in case of any emergency. There is a large military training camp near Watertown which will have a military hospital. The auxiliary will no doubt find valuable work to be done.

**Kings County.** The auxiliary held its annual meeting December 10 at the Medical Society Building. Mrs. Milton B. Bergman presided. The program was a motion-picture program produced by the American Airlines and a talk by an American Airline hostess. Following the election Mrs. John L. Bauer, organizing president, installed the incoming officers. Those elected were Mrs. Louis Harris, president, Mrs. A. F. R. Andersen, 1st vice-president, Mrs. Robert Rogers, 2nd vice-president, Mrs. Clifton Dance, secretary, Mrs. Allen Hull, associate secretary, Mrs. Henry Benfield, treasurer, Mrs. Julian Rose, assistant treasurer, and Mrs. Robert Barber and Mrs. Milton Bergman, directors for three years. Mrs. Bergman as outgoing president was presented with a past-president pin and a gift from the auxiliary by Mrs. Bauer. Tea was served by the hospitality

chairman, Mrs. Valentine Bourke, and her committee.

**Madison County.** Mrs. Martin Melamed, of Oneida County, writes: "Our program for the winter will be a get-together dinner and social evening. A main topic—The Children of Oneida and What They Do—will be discussed, and a different phase of the topic will be viewed at the following meetings."

**Nassau County.** The annual Christmas program was a delight to the busy wives of the Nassau county physicians. Projects related to public health and medicine were laid aside for the evening while games, directed by Mrs. Lola A. North, and Christmas carol singing, led by Mrs. W. J. Lee, of Garden City, pleased all the members of the auxiliary. Mrs. M. R. Bowles, chairman of the entertainment committee, invited the more than one hundred women present to draw their gifts from beneath the Christmas tree. Refreshments were served from an elaborately decorated holiday table. Six new members were added to the roster of the organization.

**Onondaga County.** The November meeting of the auxiliary was held at the Crouse-Irving Educational Building. Mrs. Marion S. Dooley and Dr. John J. Buettner were the guest speakers. The members of the Herkimer County Woman's Auxiliary were invited to attend this meeting, but they were unable to come, presumably because it was election eve. The December meeting of the auxiliary was the annual meeting and was preceded by a luncheon held at the Hotel Syracuse Terrace Room. Guest speakers were Mrs. Luther H. Kice, of Garden City, Long Island, president of the Woman's Auxiliary to the Medical Society of the State of New York, and Dr. Brewster C. Doust, president of the Onondaga County Medical Society. Reports of the various committees were read and the slate of the nominating committee was presented by Mrs. John J. Buettner.

Mrs. Edgar M. Neptune was unanimously re-elected president. All other elections were also unanimous as follows: 1st vice-president, Mrs. W. W. Street, 2nd vice-president, Mrs. Carl E. Muench, treasurer, Mrs. Raymond J. Pieri, assistant treasurer, Mrs. Gerald C. Cooney, recording secretary, Mrs. Brooks W. McCuen, corresponding secretary, Mrs. Donald E. Moore, assistant corresponding secretary, Mrs. John J. Hogan, directors for three-year term, Mrs. H. O. Brust and Mrs. Joseph R. Wiseman, delegates to the annual convention, Mesdames Garfallo, Street, Lavine, Andrews, Elwood, Hitchcock, Ritter, alternate delegates, Mesdames Swift, Lewis, Menzies, Myron, Paul, Chambers, Rosenberger, and public relations chairman, Mrs. Frederick N. Marty.

**Orange County.** Mrs. H. F. Murray, of Port Jervis, was elected president at the annual meeting held December 10 at The Maples. Other new officers are: president-elect, Mrs. W. W. Davis, of Chester, vice-president, Mrs. Leo DuBois, of Beacon, recording secretary

Mrs N P Cosco, of Middletown, treasurer, Mrs M W Walton, of New Hampton Speakers for the afternoon were Mrs Luther Kice and Dr T W Neumann, of Central Valley Mrs Kice talked on the concentrated aims of an auxiliary toward public education in matters of medicine and hygiene Dr Neumann urged the organization to continue its active interest and real assistance in public health forums, stating that "the public has a right to know what the finest standards of the physicians are" He complimented the part played by the group in its widespread educational program

Rensselaer County Mrs John J Rainey was elected president of the auxiliary at the annual meeting at the McKean Staff House of the Leonard Hospital Other officers are Mrs Eugene F Connally, president-elect, Mrs P L Harvie, 1st vice-president, Mrs W H McShane, 2nd vice-president, Mrs L S Weinstein, recording secretary, Mrs F T Cavanaugh, corresponding secretary, Mrs N F Brignola, treasurer, Mesdames J H Donnelly, S H Curtis, A W Benson, V C Jacobsen, directors

The new officers will be installed at the February meeting Mrs S H Curtis, retiring president, conducted this meeting during which all committee chairmen gave their reports. A Christmas party was held after this meeting

Mrs Helmer P Howd was chairman of the committee that distributed gifts to children in the hospital Instead of the usual Christmas donation of toys, money was given for the purchase of lamps for the nursery at the Leonard Hospital At the recent board meeting a sum of money was donated to the Red Cross and to the Home for Indigent Physicians.

Schenectady County The Executive Board of the auxiliary entertained on December 27 for seventy members at the home of Mrs. F Leslie Sullivan, Sunnyside Road, Scotia The guests were received by Mrs A W Greene, Mrs W Malha, Mrs H W Galster, and Mrs E MacD Stanton During the afternoon Mrs. Philip Parillo gave piano selections and Christmas carols were sung under the direction of Mrs Frank Furlong

## NOW FOR THE MALINGERER

The difference between a lingering illness and a malingering illness is that the malingering kind has a miraculous recovery right after the masquerader has been excused from military service An outbreak or epidemic of malingering is now expected, and some words of wisdom are printed in the *J A M A* to guide medical examiners who have to meet it

Men sometimes have their teeth extracted to avoid military service, others shoot or cut off fingers or toes or put their hands under ears for this purpose These, of course, do not miraculously recover after the medical examination, but real injuries may be exaggerated, and crutches, paraded at the examination, be discarded next day

We are told that malingerers may be divided into three general groups

(a) Real malingerers with nothing the matter with them, who injure themselves, who make allegations respecting diseases or such condition as drug taking, or who simulate disease with full consciousness and responsibility—all for the purpose of evading military service Many of these will have been coached

(b) The psychoneurotics, who are natural complainers and try to get out of every disagreeable thing in life, perhaps only partially conscious of the nature of the seriousness of what they do and only partly responsible In many the motives are not persistent and many can be made into good soldiers

(c) Confirmed psychoneurotic individuals with long history of nervous breakdowns and illnesses who behave like group (a) above but more persistently and from whom not much can be expected in the way of reconstruction.

As to feigned medical diseases

(a) The detection and management of

malingerers simulating medical diseases depend on the absence of positive signs of an individual who presents the general characteristics of the malingeringer There is especial need for the physical examination to be thorough in this group Some of the cardiac cases at first regarded as malingering may later be found to be mitral stenosis or bacterial endocarditis Similarly, proper tests may show the existence of peptic ulcers in those suspected of feigning digestive abnormalities The estimation of the reality of rheumatic pains is always a difficult matter

(b) Tachycardia and thyrotoxicosis may be temporarily induced by ingestion of drugs, such as thyroid extract Egg albumen or sugar may be added to urine Undiluted canned milk may be made to simulate the urethral discharge Cantharides may be taken to cause albuminuria. Digitals and strophanthus may be taken to cause abnormal heart action The skin may be irritated by various substances Cathartics may be taken to bring about purging or to simulate a chronic diarrhea. An appearance of hemoptysis may be produced by adding blood, either human or that of animals, to the sputum. Sometimes merely coloring matter is added. Those who can vomit voluntarily what they swallow use the same means to create the appearance of hematemesis Similarly, coloring matter may be added to the stools Mechanical and chemical irritants are made use of to cause inflammation about practically all the body orifices. Jaundice may be simulated by taking picric acid Crutches, spectacles, trusses, and strappings are made use of to create the appearance of disability Artificial jaundice is recognized by demonstration of picric acid in the urine

The semiannual meeting of the Women's Medical Society of New York State will be held at the New York Infirmary for Women and Children, on January 25 at 9 30 A.M. A dinner will be held at the Cosmopolitan Club at 7 00 P.M.

The annual meeting of the New York Heart Association was held January 7 at The New York Academy of Medicine Dr Ernst P Boas, president of the Association, presided at the meeting

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# Books

Books for review should be sent to the Book Review Department at 1313 Bedford Avenue Brooklyn N Y. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and interest to our readers.

## RECEIVED

**The 1940 Year Book of Public Health** Edited by J C Geiger, M D Duodecimo of 560 pages, illustrated Chicago, The Year Book Publishers, 1940 Cloth, \$3 00

**Obstetrics in General Practice** By J P Greenhill, M D Octavo of 448 pages, illustrated Chicago, The Year Book Publishers, 1940 Cloth, \$3 50

**Vitamin Therapy in General Practice** By Edgar S Gordon, M D, and Elmer L Sevringhaus, M D Octavo of 258 pages, illustrated Chicago, The Year Book Publishers, 1940 Cloth, \$2 75

**Dr Colwell's Daily Log for Physicians** A Brief, Simple, Accurate Financial Record for the Physician's Desk Quarto Champaign, Illinois, Colwell Publishing Company, 1941 Cloth \$6 00

**Office Urology** With a Section on Cystoscopy By P S Pelouze, M D Quarto of 766 pages, illustrated Philadelphia, W B Saunders Company, 1940 Cloth, \$10

**The Chronicle of Crichton Royal (1833-1936)** Being the Story of a Famous Mental Hospital during its First Century, and illustrating the Evolution of the Hospital Care and Treatment of Mental Invalids in Scotland By Charles Cromhall Easterbrook, M D Quarto of 663 pages, illustrated Edinburgh 12, Scotland, Murrayfield Hotel, The Author, 1940 Cloth, 25/

**The Practice of Medicine** By Jonathan C Meakins, M D Third edition Quarto of 1430 pages, illustrated St Louis, C V Mosby Co, 1940 Cloth, \$10

**Methods for Diagnostic Bacteriology** A Complete Guide for the Isolation and Identification of Pathogenic Bacteria for Medical Bacteriology Laboratories By Isabelle G Schaub, A B, and M Kathleen Foley, A B Octavo of 313 pages St Louis, C V Mosby Co, 1940 Cloth, \$3 00

**Clinical Urology** By Oswald S Lowsley, M D, and Thomas J Kirwin, M D Two volumes Octavo of 898 pages, illustrated Baltimore, Williams & Wilkins Co, 1940 Cloth, \$10

**Rose & Carless Manual of Surgery** Sixteenth edition edited by William T Coughlin, M D Octavo of 1608 pages, illustrated, Baltimore, Williams & Wilkins Company, 1940 Cloth, \$9 00

**Surgery of the Hand.** By R. M Handfield-Jones, F.R.C.S Octavo of 140 pages, illustrated Baltimore, Williams & Wilkins Company, 1940 Cloth, \$4 50

**A Manual of Embryology** The Development of the Human Body By J Ernest Frazer, F.R.C.S Second edition Octavo of 523 pages, illustrated, Baltimore, Williams & Wilkins Co, 1940 Cloth, \$9 00

**The Treatment of Diabetes Mellitus.** By Elliott P Joslin, M D, Howard F Root, M D, Priscilla White, M D, and Alexander Marble, M D Seventh edition Octavo of 783 pages, illustrated Philadelphia, Lea & Febiger, 1940 Cloth, \$7 50

**Tuberculosis and Genus** By Lewis J Moorman, M D Octavo of 272 pages, illustrated Chicago, University of Chicago Press, 1940 Cloth, \$2 50

**Synopsis of Materia Medica, Toxicology, and Pharmacology** For Students and Practitioners of Medicine By Forrest R Davison, B.A. Duodecimo of 633 pages, illustrated St Louis C V Mosby Co, 1940 Cloth, \$5 00

**Multiple Human Births** Twins, Triplets, Quadruplets and Quintuplets By Horatio H Newman, Ph D Octavo of 214 pages, illustrated New York, Doubleday, Doran & Company, 1940 Cloth, \$2 50

**The Neuroses in War** By Several Authors Under the Editorship of Emanuel Miller, M.A. Octavo of 250 pages New York, Macmillan Company, 1940 Cloth, \$2 50

**A Treatise on Medicolegal Ophthalmology** By Albert C Snell, M D Quarto of 312 pages, illustrated St Louis, C V Mosby Co, 1940 Cloth, \$6 00

**Organization, Strategy and Tactics of the Army Medical Services in War** By Lieut Colonel T B Nicholls, M B Second edition Octavo of 488 pages Baltimore, Williams & Wilkins Co, 1940 Cloth, \$5 00

**Controlled Fertility** An Evaluation of Clinic Service By Regine K Stix, M D, and Frank W Notestein, Ph D Octavo of 201 pages, illustrated Baltimore, Williams & Wilkins Co, 1940 Cloth, \$3 00

**A Guide to Human Parasitology** For Medical Practitioners By D B Blacklock, M D, and T Southwell, Ph D Fourth edition Octavo of 259 pages, illustrated Baltimore, Williams & Wilkins Co, 1940 Cloth, \$4 00

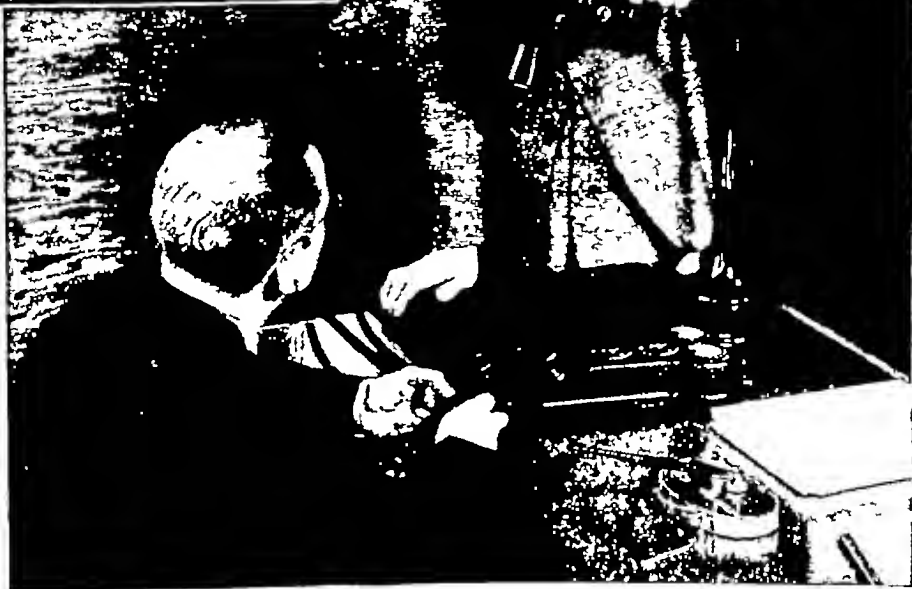
**Taber's Cyclopedic Medical Dictionary** Including a Digest of Medical Subjects By Clarence W Taber Duodecimo of 1488 pages, illustrated Philadelphia, F A Davis Company, 1940 Cloth, \$3 00

**Bacillary and Rickettsial Infections** Acute and Chronic A Textbook Black Death to White Plague By William H Holmes Octavo of 676 pages New York, Macmillan Company, 1940 Cloth, \$6 00

**Diseases of the Urethra and Penis.** By E D'Arcy McCrea, M D Octavo of 306 pages, illustrated Baltimore, Williams & Wilkins Company, 1940 Cloth, \$6 50

**Diseases Affecting the Vulva.** By Elizabeth Hunt, M D Octavo of 215 pages, illustrated. St Louis, C V Mosby Co, 1940 Cloth, \$4 00

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**A Tensão Arterial Média na Prova Anfótropa Sino-Carotidiana** By Dr Tasso Vieira de Faria Octavo of 173 pages, illustrated Porto Alegre, Biblioteca da Faculdade do Medicina, 1939 Paper

**Your Mental Health or Between Mental Health and Mental Disease For Intelligent Laymen and Physicians** By B Liber, M D Octavo of 408 pages New York, Melior Books, 1940 Cloth, \$3 00

**Loose-Leaf Specialties in Medical Practice Chapter on Dermatology and Syphilis** By Svend Lombolt, M D, and James I. Miller, M D Octavo Pages 935 to 1072 New York, Thomas Nelson & Sons, 1940

**The Theory and Practice of Anaesthesia** By M D Nosworthy, M D Duodecimo of 223 pages, illustrated New York, Chemical Publishing Company, 1940 Cloth, \$4 25

**Foundations of Short Wave Therapy Physics, Technics, Indications** By Wolfgang Holzer, and Eugen Weissenberg Translated by Justina Wilson and Charles M Dowse Octavo of 228 pages, illustrated New York, Chemical Publishing Company, 1940 Cloth, \$5 00

**Fractures and Dislocations for Practitioners** By Edwin O Geckeler, M D Second edition Octavo of 314 pages, illustrated Baltimore, Williams & Wilkins Company, 1940 Cloth, \$4 00

**Psychotherapy Treatment that attempts to improve the condition of a human being by means of influences that are brought to bear upon his mind** By Lewellys F Barker, M D Duodecimo of 218 pages New York, D Appleton-Century Company, 1940 Cloth, \$2 00

**The Diagnosis and Treatment of Diseases of the Heart** By Henry A. Christian, M D (Reprinted from Oxford Monographs on Diagnosis and Treatment) Octavo of 599 pages New York, Oxford University Press, 1940 Cloth, \$7 00

**Asthma and the General Practitioner** By James Adam, M D Octavo of 157 pages Baltimore, Williams & Wilkins Co, 1939 Cloth \$2 00

In a small volume of 150 pages written especially for the general practitioner, the author discusses his methods of treatment of bronchial asthma. On the basis of his experiences with 2,000 patients the writer is convinced that asthma is largely preventable and not incurable. Although admitting the existence of food and inhalant allergy in some cases, the majority of patients were successfully treated by general methods.

Increased carbohydrate intake, vitamin-deficient diet, complex modern life, and defective adrenal function, all combine to react on the autonomic nervous system, the endocrines and enzyme action to create a "toxic soil on which allergy seeds"

The author's general treatment consists of some form of physical exercise to avoid nasal congestion, breathing exercises, a vitamin-rich and low-carbohydrate diet to help enzyme ac-

**The 1940 Year Book of Industrial and Orthopedic Surgery** Edited by Charles F Painter, M D Duodecimo of 484 pages, illustrated. Chicago, The Year Book Publishers, 1940 Cloth, \$3 00

**The 1940 Year Book of Pathology and Immunology** Pathology edited by Howard T Karsner, M D, and Immunology edited by Sanford B Hooker, M D Duodecimo of 688 pages, illustrated Chicago, The Year Book Publishers, 1940 Cloth, \$3 00

**The New International Clinics. Original Contributions Clinics, and Evaluated Reviews of Current Advances in the Medical Arts** Edited by George M Piersol, M D Volume IV, New Series Three Octavo of 326 pages, illustrated Philadelphia, J B Lippincott Co, 1940. Cloth, \$3 00

**The Family Doctor's Notebook.** By I. J Wolf, M D Octavo of 315 pages. New York, Fortuny's, 1940 Cloth, \$2 00

**Why Men Behave Like Apes and Vice Versa, or Body and Behavior** By Earnest A Hooton. Octavo of 234 pages, illustrated. Princeton, Princeton University Press, 1940 Cloth, \$3 00

**Surgical Anatomy of the Head and Neck.** By John F Barnhill, M D, and William J Melinger, M D Second edition Quarto of 773 pages, illustrated Baltimore, Williams & Wilkins Company, 1940 Cloth, \$15

**Foreign Bodies Left in the Abdomen. The Surgical Problems Cases, Treatment, Prevention The Legal Problems, Cases, Decisions, Responsibilities** By Harry S Crossen, M D, and David F Crossen, LL B Quarto of 762 pages, illustrated St Louis, C V Mosby Co, 1940 Cloth, \$10

**Methods of Treatment.** By Logan Glendenning, M D, and Edward H Hashinger, M D Seventh edition Octavo of 997 pages, illustrated St Louis, C V Mosby Co, 1940 Cloth, \$10

## REVIEWED

tion, colonics and weekly mercurial administration as detoxicating therapy, eradication of foci of infection, elimination of aspirin, morphine, and raw milk in all cases, and avoidance of overdosage with epinephrine. If there is no improvement in three months, allergio study is advised.

The point of view expressed in this volume is not the one generally held by American workers in this field.

MAX HARTEN

**Die Biologische Reaktion Eine Funktionelle Analyse und Synthese Biometrischer Werte zur Zahlenmässigen Erfassung von Allergie, Allgemeiner Resistenz, Spezifischer Resistenz, Krankheitsintensität Extensität Aktiver Herde Immunität** By Dr O H Bucher-Trümppler, and Dr C C Hofflin-Karwatzki Quarto of 262 pages, illustrated Bern Medizinischer Verlag Hans Huber, 1939 Cloth, Swiss francs 42 80

This book is an interesting attempt to replace the description of a disease and its prognosis by a graphic technic supposed to represent the biologic

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reaction of the system in question. This biologic reaction is given on the basis of the quantum theory to determine allergy, general resistance, specific resistance, especially as to tuberculosis, intensity of disease, extensity of active foci, and immunity. The reading of the attractive and excellently reproduced graphs is probably far beyond the mathematic capacity of the average physician, but that does not justify the statement that the medical profession is still in the "Classic ancient times" of Aristotle and Virchow.

MAX BERLINER

**Practical Bedside Diagnosis and Treatment.** By Henry Joachim, M D. Quarto of 828 pages. Springfield, Charles C Thomas, 1940. Cloth, \$7.50.

Because of the great amount of information that has been amassed concerning the diagnosis and treatment of disease, the attempt to put all this together in one volume becomes a formidable task. The author has attempted this bravely and has produced a book that is concise and readable and that demonstrates thorough knowledge of bedside diagnosis and treatment. Unfortunately the effort to accomplish all this in some eight hundred pages has required a brevity that impairs the usefulness of the book. The discussion of the diagnosis of a given disease reads like a rapid summary. This effect is enhanced by the continued use of short sentences. When the reader looks for advice as to treatment he is again disappointed by brevity. For example, one-half page is devoted to the serum treatment of pneumonia. The reviewer was sorry to discover that the author adheres to the old anatomic classification in the section on diseases of the heart. There are sections on simple endocarditis, aortic insufficiency, mitral stenosis, etc., which will be confusing to the modern student who has been taught the etiologic classification.

The shortcomings of the book are due to the attempt to cover a tremendous amount of ground in a short space, and as a result it does not do justice to the knowledge and experience of the author.

E P MATNARD, JR.

**The Newer Nutrition in Pediatric Practice.** By I Newton Kugelmass, M D. Octavo of 1,155 pages, illustrated. Philadelphia, J B Lippincott Co, 1940. Cloth, \$10.

The purpose of the book is "An understanding of the normal functions of the body in relation to each of the fifty essential nutrients is the only basis for individualizing nutrition at all ages, types of constitution, and levels of body functioning." Section one on nutritional physiology reveals the physical and chemical basis of the growing organism in terms of the materials of life derived from food, air, and water. Section two on nutrition in health presents established principles and procedures for the advancement of positive health and the prevention of chronic disease. Section three on nutrition in disease considers most of the disorders of infancy and childhood in terms of nutrient causation or involvement as a basis for rational therapy.

The book has 183 illustrations with 422 tables, a full index, and abundant listing of modern literature. With its 1,155 pages it makes its initial bow among the illustrious books on nutri-

tion and naturally assumes its place as a reference work on nutrition and the child.

The nomenclature and so-called "facts" are up to date, and in some places one wonders whether the new is any advantage over the old. However, "It has had, wisely or unwisely, the assistance or criticism of no one, having grown like practice, out of typical cases 'animo et fide'."

ARCHIBALD D SMITH

**Compendium of Regional Diagnosis in Lesions of the Brain and Spinal Cord.** A Concise Introduction to the Principles of Localization of Diseases and Injuries of the Nervous System. By Robert Bing. Translated and edited by Webb Haymaker. Eleventh edition. Quarto of 292 pages, illustrated. St Louis, C V Mosby Co, 1940. Cloth, \$5.00.

This publication, the eleventh version since its publication in 1909, continues to maintain its high place in the esteem of all students. Because of the complexity of its anatomy the study of neurology is viewed with apprehension by the beginner, and firm pegs are essential on which to hang the clothing of ideas. This book provides such pegs thus assuring a well-grounded approach to the study of clinical neurology. The student is grateful for the unusual clarity of style as well as dogmatic fashion in presentation. When crowded shelves are cleared of books, a volume of Bing remains as testimony of the esteem in which it is held.

In the 275 pages of reading matter are found 125 illustrations, 27 in color, most of which can be found in the earlier editions and form an essential basis of the charm which this volume holds for all students who have learned their early clinical approach from its pages. The reviewer continues to have for this book the same high regard formed twenty years ago.

HAROLD R. MERWARTH

**Medical Diseases of War.** By Sir Arthur Hurst, M A. Octavo of 327 pages. Baltimore, Williams & Wilkins Co, 1940. Cloth, \$5.50.

The vast experience of the author and the access he has had to medical records of the various armies during the time elapsed from the second edition in 1918 to the present has enabled him to give an excellent work.

A different point of view, contrasting war situations with civil neuroses, is presented. Civil practice enjoys Freudian orthodox analysis with abreaction of repressed unconscious material lasting years. The author's material is situational and entirely conversive, hysterical syndromes, fear, injury, and concussion being direct precipitating factors.

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In bringing this work up to date, the author and his collaborators have given us a useful and timely treatise on military medicine

CARL W LUPO

**Tuberculosis of Bone and Joint.** By G R Girdlestone, M A Octavo of 265 pages, illustrated New York, Oxford University Press, 1940 Cloth, \$8 75

This volume contains a wealth of knowledge on tuberculosis of bone and joints The author discusses the subject excellently from the standpoint of local and general manifestations and covers very well tuberculosis of hip, spine, knee, sacro-iliac, ankle, tarsus, shoulder, elbow, and wrist

His chapter on Pott's paraplegia is enlightening and is worthy of perusal by both the general practitioner and the orthopedic specialist

Illustrations of x-rays and the diagrammatic illustrations of pathology, together with illustrations of operative procedures, all add to the merit of this work

Apparatus is discussed to some extent throughout the text and also in the appendix

HERBERT C FETT

**Dermatologic Allergy An Introduction in the Form of a Series of Lectures** By Marion B Sulzberger, M D Octavo of 540 pages, illustrated Springfield, Charles C Thomas, 1940 Cloth, \$8 50

To those of us in dermatology who are familiar with Dr Sulzberger's profound knowledge of this subject and his wide experience, this volume comes as a rare treat Despite his modest assertion in his preface that "this book is intended to be only a primer, an Introduction to Dermatologic Allergy in the form of lectures based on those I have been giving to beginners," it is certain to enjoy a wide popularity because it places in the hands of the profession one of the most comprehensive expositions of the subject of allergy in relation to the skin that we have as yet had the pleasure to examine The author has the happy faculty of lucid expression, and the idea of publishing his work in the form of lectures, greatly augmented with many notes and lavishly illustrated with some thirteen color plates and many excellent photographs, is a happy one The reader, if he will but take each lecture in its proper turn, is certain to gain a full and entirely authoritative knowledge of the subject

NATHAN THOMAS BEERS

**Elmer and Rose Physical Diagnosis** Revised by Harry Walker, M D Eighth edition. Octavo of 792 pages, illustrated St Louis, C V Mosby Co, 1940 Cloth, \$8 75

The eighth edition of Elmer and Rose has been revised by Harry Walker of the Medical College of Virginia There have been a few changes in the text since the last edition, with some rearrangement of the chapters, but the greatest revision has been in the illustrations These and the numerous diagrams are pertinent, well re-

produced, and constitute perhaps the most valuable feature of an excellent text Mention should be made of the use of the new tinted paper in this edition The reviewer found it definitely more restful and easier to read both in natural and artificial light

MILTON PLOTZ

**A Textbook of Medicine** By American Authors Edited by Russell L Cecil, M D Fifth edition Octavo of 1,744 pages, illustrated. Philadelphia, W B Saunders Co, 1940 Cloth, \$9 50

No greater compliment can be paid a textbook than the necessity for a revised edition every three years That has been the history of this book since the first edition in 1927 This edition revised and entirely reset presents a few additional commendable features Ten entirely new articles have been added, and thirty others rewritten One hundred thirty-one added illustrations further adorn the text

The chapter on lobar pneumonia, of course, had to be rewritten in the light of the introduction of chemotherapy The discussion of this phase of the treatment is complete and up to date

The student of the past generation notes with amazement that the discussion of rheumatoid arthritis receives as much space as typhoid fever

The volume consists of 1,744 pages The reviewer again urges the publishing of the ever-increasing bulkiness of the modern textbook of medicine into two volumes The book fully deserves the increasing popularity it enjoys

S R BLATTES

**The Injured Back and Its Treatment.** Edited by John D Ellis, M D Quarto of 377 pages, illustrated. Springfield, Charles C Thomas, 1940 Cloth, \$5 50

This book is a series of monographs by different individuals Various phases of the subject are discussed so that the reader may obtain a bird's-eye view of this ever-present complaint

The chapter on "Man's Posture and Backache A Symptom of Visceral Disease" serves as a background for the book

The routine examination of the injured back is thoroughly discussed. The management of recent compression fractures of the vertebral bodies without cord injury is comprehensive Early reduction with adequate fixation until healing occurs is the criteria of good treatment. All of the various methods of obtaining complete hyperextension are described

The chapters on the neurosurgical aspects of back injuries and the role of the articular facets in low back pain are instructive

Disabling back injuries frequently originate from trivial trauma due to associated pathology Prevention of back injuries by teaching the proper method of lifting and fitting the type of individual to his job is needed

This book is a compact review of different aspects in the diagnosis and treatment of the injured back. It is a "must" for the library of the general practitioner and specialist Each chapter contains an extensive bibliography for reference The diagrams and x-ray illustrations are well done

OTHO C HUDSON

# NEW YORK STATE JOURNAL OF MEDICINE

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## *Editorial*

### Industrial Health and the Defense Program

The sessions of the Third Annual Congress on Industrial Health, recently concluded in Chicago under the auspices of the Council on Industrial Health of the American Medical Association, shed much cold, searching light upon the problems of industrial health and the deficiency of current facilities for meeting them.

A critical analysis of the data presented seemed to indicate a great lack in the recent past of intelligent, coordinated integration between industry on the one hand and administrative education on the other. The net result seems to be that industry has attempted, in solving its safety problems, to enter the educational field in an effort to create practically trained personnel, while educational institutions have confined themselves largely to inquiry along the line of pure research. While these several activities have undoubtedly produced some results, they have left unfilled enormous gaps, due to the disjointed and apparently little coordinated schedules. These gaps become the more apparent as the speed-up of industry progresses in the production of defense materials. Shortages begin to appear in nursing and other technically trained personnel, an inadequate number of physicians apparently are familiar with the techniques of industrial preventive medicine and industrial disease diagnosis, labor shortages are creating problems in the employment of the physically handicapped, the aging of the popula-

tion is becoming increasingly a problem of industrial health.

Always important, the health and well-being of industrial workers becomes doubly significant to the national interest in times of world political imbalance, when the national safety is threatened both within and without. To provide a maximum of health and physical efficiency four agencies are involved: industrial management, education, government, and medicine. The Council on Industrial Health has done a most commendable service in bringing these four agencies together in this Congress—toward a mutual understanding of the common problems to be met.

The industrial speed-up is making acute the many shortages in trained personnel. Surveys of small shops and industries by the government reveal the considerable hazards from dusts, chemicals, solvents, etc., which are there encountered. More than mere consultation about these hazards and the deficiency of personnel is necessary. Something has to be done about it. Who is to do it? How is it to be done? Who is to pay for it? Is such a program to be left to the individual states to meet as they think fit, or should such a program be organized and supervised by the Federal government through such an agency, for example, as the Social Security Administration? To say how it should be done is not in our province. A project

requiring the coordination of such diverse activities as those of medicine, nursing, engineering, materials production, administration, chemistry, architecture and many others should be integrated into the general defense program by some agency which is in a position to know what the defense program contemplates

Industrial hygiene in the State of New York is under the supervision of the State Department of Labor and has been the outgrowth of a campaign mainly for the prevention of industrial accidents. At the present time the Department carries on through its Division of Industrial Hygiene many investigations of factory conditions, dust analyses, examinations of ventilating systems

and the like. We feel sure that the State Department of Labor would cooperate, as would the State Department of Health and many other government agencies, in evolving a plan by which the last of our questions could be answered, namely how such an expanded program of instruction in industrial hygiene could be financed. For financed it must be. There is little use speaking practically, in drawing elaborate plans or developing projects before the question of how they are to be paid for and by whom is settled. If the industrial health program is to become an effective measure for national defense it must be coordinated with the general plan and be adequately financed without loss of time.

### "Tuberculosis Must Go"

The new program to eradicate tuberculosis in the State of New York, outside of New York City, received added impetus early in January at a meeting of leading state officials, executives, and representatives of the Medical Society of the State of New York and voluntary health and welfare agencies. The meeting was the first one of a special coordinating committee appointed by Commissioner Edward S. Godfrey to initiate an expanded case-finding and control program during 1941.

Representing the State Department of Health were Commissioner Godfrey, Dr. Robert E. Plunkett, Dr. V. A. Van Volkenburgh, and Miss Marion Sheahan, the State Department of Mental Hygiene, Commissioner William J. Tiffany, the State Department of Social Welfare, Commissioner David C. Adie, the State Charities Aid Association's Committee on Tuberculosis and Public Health, Mr. Homer Folks, Mr. George Nelbach, Mr. Robert W. Osborn, the Medical Society of the State of New York, Dr. Peter Irving, secretary, the Metropolitan Life Insurance Company, Dr. Donald Armstrong, third vice president.

*Elimination of tuberculosis as an im-*

portant medical and social problem within twenty-five years or an even shorter period was seen as a possibility by Dr. Godfrey, if to its control were applied the knowledge gained by past experience and if specific measures for its prevention were made the dominant factor in dealing with tuberculosis as the infectious disease. It is discovery at the earliest moment of the advanced cases which spread infection and bringing them under control. To this end Mr. Folks announced a grant of \$5,000 from the Metropolitan Life Insurance Company to help finance the participation of the S. C. A. A. in the tuberculosis eradication project during 1941. The Association's total tuberculosis budget is \$61,000. In 1907 the tuberculosis mortality rate, said Mr. Folks, was 152.8 per 100,000, in 1939, it had declined to 36.4.

The program for 1941 as outlined by Dr. Plunkett would be directed toward a much greater concentration of effort upon examination of contacts, x-ray examination of persons presenting symptoms of fatigue, loss of weight, persistent coughs, or other unexplained symptoms, case finding among groups particularly susceptible because of occupations, racial, age, social, or economic factors, more

prompt and effective utilization of hospital facilities. Participating in the program will be the various public health authorities, sanitariums, tuberculosis clinics, public health nursing services, tuberculosis associations, and other health and welfare agencies.

The active participation of the Medical Society of the State of New York and of its various component county societies in such a program of public health education as that advocated by the coordinating committee is assured. Such a program of case finding and the elimination of sources of occupational as well as off-duty tuberculosis contacts fits appropriately into the contemplated national effort to eliminate health hazards in industry and civil life. It seems to meet the requirements in that it will be competently directed and adequately financed.

### Tuberculosis Abstracts\*

SIXTEEN and one-half million men have registered for military service. Almost one million of them have thus far been selected. According to news reports the men will be subjected to a hardening process to the point where they will be able to march thirty miles per day bearing full equipment. It is highly important that among them there shall be none who, because of a tuberculous focus, will crack under the strain. So that costly lessons, learned during the World War may not go unheeded, Spillman in an article in the *Journal of the American Medical Association* summarizes the methods employed to discover tuberculosis, calculates the enormous cost of service-acquired tuberculosis and discusses what should be done to safeguard the nation's manpower and financial resources against the enemy which bores from within.

### Tuberculosis and Military Service

*How can the recruit who already has active tuberculosis be recognized, that he may be rejected for the protection of himself and others?*

The World War is 22 years behind us, yet the Federal government pays in compensation for tuberculosis that originated in service about \$3,000,000 each month. Analysis of voluminous

and complicated Federal reports dealing with service-acquired tuberculosis yields the following approximate figures

Cost of vocational training	\$129,000,000
Insurance	130,000,000
Compensation	600,000,000
Hospital care	100,000,000
	<hr/> \$959,000,000

The total number of men compensated for tuberculosis in 1922 (it is not feasible, from the annual reports, to run the figures back past 1922) was 36,600. In 1939, the total number was 55,634, including 1,947 deaths for that year.

The cost of taking a man who has tuberculosis into the service cannot be accurately calculated because of many factors that are still unknown and costs that are not apparent, but the author estimates that the figure would be somewhere around \$10,000 per man to date, certainly not less than \$7,500, to which should be added at least \$50 a month for the rest of the man's life and compensation for his dependents after death.

Study of army procedure during the World War leads to the conclusion that the methods employed for the detection of tuberculosis were inadequate. This does not detract from the stature of that distinguished army surgeon, Colonel George E. Bushnell, the advisor to the Surgeon General on all matters pertaining to tuberculosis. It was the consensus of experts in 1917 that adult exogenous infection with tuberculosis is rare, that infection in childhood is well nigh universal and that every infection confers an immunity to anything short of massive doses of bacilli in later life. By the same token, adult tuberculosis was held to result from a reactivation of the antecedent infection. It was thought that for every soldier who had incurred tuberculosis as a result of military service, 10 others had brought the disease with them into the army. Present-day experience does not uphold this belief—to cite at random just one of numerous communications, Diehl and Myers prove the development of 6 cases of tuberculosis in one college fraternity a year after one of its members was found to have a positive sputum, and the development of tuberculosis in a girl several years after her sorority roommate was found to have tuberculosis.

Colonel Bushnell trained a large number of highly competent diagnosticians, to whom he imparted the significance of the post-tussal moist rale and the technic of eliciting it. The patient is instructed to cough gently at the end of deep expiration. When he inhales after the cough the rale is heard. The presence of persistent moist rales was the criterion for determining the existence of tuberculosis. Several prominent physicians and radiologists tried to induce the Surgeon General to make the radiograph the decisive factor in the diagnosis of pulmonary tuberculosis. The practical difficulties in the way of the adoption of the radiograph were, however, insuperable, according to Colonel Bushnell, in which conviction he was supported by a special committee of the Council of National Defense which investigated the question. Among the difficulties were the enormous cost of photographing, the impossibility of obtaining a sufficient number of plates (made of glass and most of it imported from Belgium) and the lack of trained radiologists.

\*Reprinted from *Tuberculosis Abstracts* 14, No 1 (Jan.) 1941.

Draft boards set up in every community added to the difficulty. These boards included local physicians who were supposed to reject draftees with disqualifying defects. While most draft boards functioned honestly and intelligently there is evidence in official publications that, far from weeding out the manifestly tuberculous, some boards actually concentrated tuberculosis at some of the camps, thinking that they would benefit by change of climate and by army life. In the re-examination of 19,827 men at Camp Kearny, for example, 853 cases of tuberculosis (4.33 per cent) were discovered.

With this background, what should our procedure be in the present situation? Of the available methods for the mass diagnosis of tuberculosis among recruits, physical examination and radiography need to be considered on a basis of relative merits. Evidence of the inadequacy of physical examination to detect tuberculosis is overwhelming. The last word so far as the army was concerned in 1917 was that "the only trustworthy sign of activity of apical tuberculosis is the presence of persistent moist rales." In the light of present-day knowledge this sign is worth only about 12.5 per cent. In spite of the acknowledged skill of the army examiners of 1917 only about one-eighth of the actually existing clinically significant tuberculosis was detected.

The radiograph should be the criterion in weeding out tuberculosis in today's mobilization. In what form? Fluoroscopy gives no record and is highly subjective. As demonstrated by the experience of a large life insurance company, fluoroscopy in skillful hands may serve as an alternative to a prohibitively expensive routine of roentgenography, but even this company has, since 1936, been making routine roentgeno-

grams of the chest of every applicant for employment.

The paper roentgenogram is speedy and convenient and cheaper than celluloid. Radiologists as a whole do not favor the paper radiogram while tuberculosis workers are enthusiastic over it. If celluloid films were available on rolls like the paper rolls they would undoubtedly be preferred. Paper roentgenograms are vastly preferred to no roentgenograms but celluloid would be preferred if the author were given a choice.

Photography of the fluoroscopic screen is another possibility. But if this method, known as fluorography, is no more than 90 per cent efficient as compared with the standard celluloid roentgenogram, as the author believes, the 10 per cent shortage in diagnosis would cost a great deal of money in compensation later. Fluorography is today a highly promising method but awaits further improvements before it can compete with celluloid roentgenograms.

For radiography there are many kinds of apparatus varying in price and capacity. What is most important, however, is the skill and knowledge of the operator.

The author's final conclusion is

"A normal chest roentgenogram should be the criterion of acceptance in a future mobilization, including the proposed draft for training, and it should be made and reported before the recruit has spent a night away from his own roof to obviate a repetition of the claims for aggravation of pre-existing tuberculosis which occurred during and after the World War."

*The Value of Radiography in Detecting Tuberculosis in Recruits, Ramsay Spillman, M.D., J.A.M.A., Vol 115, No 16, October 19 1940*

## Early Diagnosis of Cardiac Syphilis

The importance of the campaign to eradicate syphilis by early and intensive treatment is epitomized by the statement of Berk,<sup>1</sup> in this issue of the *JOURNAL*, that "unsuspected or insufficiently treated syphilis may manifest itself as a cardiac disease. Once clinically recognizable, it frequently baffles all treatment. The patient becomes a hopeless invalid and often dies without warning." The vast amount of clinicopathologic data anent cardiovascular lues has added but little to the early detection of involvement of the heart, its valves and musculature and the ramifications of its arterial system. Electrocardiographic studies have received only passing attention, and those recorded in the literature have dealt mainly with the changes noted in advanced lesions.

Berk's study, over a period of nine years, of 172 cases of cardiovascular syphilis showed that of the 20 in their earliest stages, wherein clinical evidence was highly equivocal and where the electrocardiograms showed abnormal deviations in only 5 per cent, the graduated exercise test altered this figure to 25 per cent. Before the exertion test in 7 cases of aortic insufficiency, 5 were normal electrocardiographically. Following exercise, however, marked pathologic changes were noted. In 2 cases, the ST<sub>1</sub> and ST<sub>2</sub> were negative and the ST<sub>3</sub> positive, in 2 others, the ST<sub>2</sub> and ST<sub>3</sub> were negative, while in the remaining one, the ST<sub>3</sub> alone was negative. All of these showed in addition numerous extra systoles from ectopic foci. It is Berk's opinion that an objective diagnosis of early cardiovascular syphilis is

<sup>1</sup> Berk, L. H. *N Y State J Med*, this issue.

possible by electrocardiographic studies made with the graduated exercise tests. Where 95 per cent of these cases exhibited normal findings with the usual method of examination, transient myocardial anoxemias and pathologic cardiographs were demonstrable in 25 per cent of the cases examined on recordings taken at intervals of from two to ten minutes after effort. A positive test is indicated by a characteristic upward or downward displacement of the RS-T junction and alterations of this segment in two or more

leads. Ectopic beats and changes in the initial deflection were also present.

That a normal or borderline electrocardiogram in a case of syphilitic aortitis with beginning ostial stenosis can become positive after the exercise tests is an observation of note. If his studies are confirmed, the routine use of this procedure in the follow-up of luetics under treatment may unearth cardiovascular syphilis at a much earlier stage than is possible at the present time.

### Educational Offensive

The importance of the early diagnosis and thorough treatment of syphilis cannot be overemphasized. Especially at this time it is of the utmost importance in view of the increasing number of young men entering military service. For this reason we devote this issue of the JOURNAL to a symposium on syphilis as our contribution to the educational offensive being conducted by the Surgeon General.

Surgeon General Thomas Parran, in a letter to State Health Officers, announces plans to acquaint every man registering under the Selective Service and Training Act with the facts about syphilis and gonorrhea and their relation to national defense, and he urges

that registrants have blood tests for syphilis.

"Registrants for America's first peacetime draft," Dr. Parran pointed out, "make up the age group in which is concentrated most cases of infectious syphilis. Blood tests of this group will lead to the discovery of a large number of cases of syphilis in the stage of the disease during which treatment is most effective. Stopping the spread of syphilis among this group would bring the control of syphilis among the whole population nearer by many years."

"Discovery and treatment of syphilis among registrants *now* will increase the reservoir of men available for active and efficient duty in the armed forces and in industry."

### Work in a British Clearing Station

With our defense program under way and with little else to help us except our experiences in the last war and probably some scant reports that have filtered through from the Spanish civil war, the brief notation of Brown, Dennison, Ross, and Divine,<sup>1</sup> on their experiences at a clearing station in Britain during the evacuation from Dunkirk, affords us a guide for the activity of the Medical Corps in this new type of warfare.

Within a space of twenty-four hours, 500 seriously wounded men, exhausted by lack of sleep, food, and constant bombardment, were admitted to this receiving station. Copious drinks of hot tea cut down the number of intravenous infusions which otherwise would

have been necessary. Prolonged treatment for shock, with the aid of cradles, transfusions, morphine, and synthetic adrenal hormones saved many lives. Surgical cases were divided into immediate, early, and late. In the first category were included head wounds, perforating abdominal wounds, severe burns, and thoracic injuries. Following the evacuation of these cases, fractures, removal of foreign bodies, and cases requiring colostomy received attention.

Amputations and cases of gangrene then followed. The therapy here was irrigation with peroxide of hydrogen, local application of sulfapyridine, and the administration of the drug orally. Their report, that the closed plaster technic for treating infected wounds proved more simple and efficacious than the

<sup>1</sup> Brown J. M., Dennison, W. M., Ross J. A. and Divine, D. *Lancet* 239: 443 (1940).

old method of irrigation with Carrel-Dakin solution, is notable and bears out our current reports

It appears that the only problem that presented difficulties at this casualty clearing station was that of anesthesia. Due to the severe shock and exsanguination which these

soldiers exhibited, the deepest stages were reached with a minimum amount of anesthetic. That this small British hospital could treat successfully 500 wounded under the most adverse conditions within a period of twenty-four hours is a tribute to the resource of the medical profession.

## Correspondence

### NEW YORK STATE REREGISTRATION FOR PHYSICIANS IN MILITARY SERVICE

Attention of all concerned is called to the following correspondence, which is self-explanatory.

MEDICAL SOCIETY OF THE STATE OF NEW YORK, 292 MADISON AVENUE, NEW YORK

December 28, 1940

Mr Charles B Heisler, Director  
Division of Professional Education  
University of the State of New York  
State Education Department  
Albany, New York

Re Reregistration of Physicians Called into  
Uniformed Service

Dear Mr Heisler

A question has just been asked me that I was unable to answer, and I would be very much obliged if you would let me have an official ruling that will cover the matter. A doctor in practice in this city who went into service in the middle of

December expects to be in uniform throughout 1941, and, therefore, absent from practice. Does the law require that he reregister for 1941, or can he legally omit reregistration and payment of the \$2.00 fee until he returns to practice?

I presume many such questions will come to this office from now on. It is in my mind that we could be helpful both to your office and to the doctors if we had on record a definite ruling from whatever source that should come.

If you would think well, I would be very glad, in addition, to publish an announcement in the NEW YORK STATE JOURNAL OF MEDICINE.

Sincerely yours,

Peter Irving, M D, Secretary

THE UNIVERSITY OF THE STATE OF NEW YORK

THE STATE EDUCATION DEPARTMENT

ALBANY

January 3, 1941

Dr Peter Irving, Secretary  
Medical Society of the State of New York  
292 Madison Avenue  
New York, New York

Dear Dr Irving

I am glad to give you a ruling on the question raised in your letter of December 28.

The law prescribes that every physician actually engaged in the practice of medicine under the laws of this state must register with the Department each year. This means that any physician so engaged in practice during any part of the year 1941 must register, even though he may be otherwise engaged for the greater part of the year.

On the other hand a physician not so engaged during the whole of the year 1941, whether by

reason of military service or for some other cause, is not required to register although he may do so, if he wishes, in order that his name may appear in the printed list. The failure to register by such a physician in no way affects the validity of his license.

Therefore, a physician who was engaged in practice in this state on January 1, 1941, must register, even though he expects to enter military service within the month or later and a physician who was not engaged in practice in this state on January 1, 1941, is not required to register until he resumed his former status and again takes up the practice of medicine in this state later in 1941 or thereafter.

You are quite at liberty to give this letter such publicity as you may wish.

Very truly yours,

Charles B Heisler, Director

# CARDIOVASCULAR SYPHILIS

## A Clinical and Electrocardiographic Study

L H BERE, M D , New York City

SINCE statistics show a decline in syphilis, the incidence of cardiovascular syphilis will probably diminish in the future. At present, however, cardiovascular syphilis remains a menace to public health and presents a problem to the cardiologist in spite of more efficient control and better treatment of early syphilis. The next twenty-five years will demonstrate the effectiveness of early, persistent, and continuous treatment of syphilis in the prevention of cardiovascular disease.

The present study was undertaken in an attempt to ascertain the accuracy and significance of the electrocardiographic findings and to observe any correlation that might exist between the clinical aspects of the disease and the pathologic picture.

After an insidious and long latency lasting from five to twenty years, unsuspected or insufficiently treated syphilis may manifest itself as a cardiac disease. Once it is clinically recognizable it frequently baffles all treatment. The patient, having missed the opportunity for successful early treatment, becomes a hopeless invalid and often dies without warning.

### Pathology

The recognition of mesaortitis as a late syphilitic condition and of its pathologic, anatomic, and microscopic structure has become well known only since the beginning of this century.<sup>1-5-12-17</sup>

Four types of cardiovascular syphilis can be differentiated. The supravascular, uncomplicated aortitis represents the earliest localization of the disease. In this type the pathologic process may extend gradually up to the aortic arch and the descending aorta where it ends sharply at the border between the descending and thoracic aorta, the ascending process may involve the commissures and the aortic valves, producing an insufficiency of the aortic valves but never invading the other cardiac valves. One or both coronary ostia, lying in the sinus of Valsalva, may become narrowed or completely closed as the inflammatory process reaches them, thus producing a coronary ostial stenosis.

On gross examination the aortic walls are found thickened, and the inner surfaces of the intima, due to the inflammatory changes in the media, show a peculiar wrinkling and buckling. The muscular and elastic fibers in the media are more or less destroyed and replaced by fibrous tissue which may dilate in a diffuse or circumscribed way and lead to aneurysm. Media and adventitia show extensive inflammatory changes, in the latter mainly about the vasa vasorum. Arteriosclerotic changes with fatty degeneration and calcification are often superimposed on the syphilitic fibrous changes of the intima.

### Clinical Course

According to the localization and extent of the anatomic changes in the aorta and in the heart, the clinical picture will vary as to diagnosis and prognosis.<sup>3-14-19-20</sup> The pathologic process may show a progressive tendency or may become nonprogressive at any time.

The nonprogressive form of uncomplicated aortitis probably comprises most of the cases that have had early specific treatment and systematic follow-up or have, because of other biologic factors still unknown, reached the latent stage. It is not usually recognized clinically and is quite often an accidental finding at autopsy.

The diagnosis of the progressive as well as the nonprogressive form of uncomplicated aortitis in the large majority of cases shows certain characteristic symptoms and signs that make reasonably certain the diagnosis of syphilitic aortitis. In the early diagnosis of aortitis there is found a palpable, parasternal, diastolic pulsation in the second intercostal space, corresponding with the second aortic sound, a soft systolic murmur, audible over the aortic area, and a loud, ringing, second aortic sound. The x-ray examination will often show marked widening with increased density and pulsation of the ascending aorta, the arch, or the descending aorta. In uncomplicated aortitis the heart is often of normal size and configuration. Normal or even low blood pressure is frequently found.

Aortalgia with substernal burning and oppression, especially on exertion, emotional stress, or after meals, with diminished physi-

From Bellevue Hospital (Columbia University) First Medical Division. Dr. I O Woodruff, director and the Department of Laboratories. Dr. D Symmers, director.

cal efficiency may be an early sign. Typical or atypical anginal pain or anxiety appear later. These can be due to the uncomplicated aortitis alone. Only frequent and grave stenocardia and cardiac insufficiency point with some probability to the involvement of the coronary ostiums.

The syphilitic angina pectoris of effort (work or excitement) has an anatomic basis in the majority of cases in an organic narrowing or closure of one or both coronary ostiums. Whereas in coronary sclerosis the entire course of the coronary vessels is involved by the pathologic changes, in syphilis these changes are localized to the coronary ostiums in the sinus of Valsalva, with or without having previously involved the aortic valves.

This narrowing of the coronary ostiums occurs in about one-half of the cases. It produces a diminished blood supply to the cardiac muscle with typical complaints, after physical or emotional stress, radiating in the usual manner, and it is often relieved at once by nitroglycerin. Cases that do not show this pattern occur frequently. As proved by autopsy, there may even be a marked stenosis that never produces attacks of angina during life.

In some cases great anxiety is felt by the patient, with or without anginal pain. It occurs first after effort and later during rest without visible cause and can be abolished by nitroglycerin. This state of great anxiety, quite unexplainable to the patient, is perhaps the result of an insufficient blood supply to the myocardium.

Diagnosis of coronary ostial stenosis can often be made when a more or less grave coronary insufficiency occurs, either as a temporary or permanent state. In other cases a suddenly occurring, grave angina without apparent cause or paroxysmal nocturnal dyspnea in an apparently healthy person points to circulatory disturbances in the coronaries, death often occurring without any signal. Syphilitic aortic disease is the most common cause of sudden death.

Syphilis is important but limited in comparison with other etiologic causes underlying the true anginal syndrome, and in the past its part has been exaggerated. Including both certain and doubtful cases the proportion of persons suffering from syphilis amounts to about 20 per cent among 1,900 cases of angina collected by Gallavardin.<sup>4</sup> He observes its maximum occurrences in the ages between 30 and 45. After 50 years of age the common atherosclerotic type of involvement of

the entire coronary trunk on a latent syphilitic basis prevails. The majority of cases present angina of effort, frequently with attacks at rest or at night which are indistinguishable from those associated with coronary atherosclerosis. Though not absolute, the surest sign of syphilitic angina is the presence of aortic insufficiency, usually of very slight degree. In hypertension, especially in advanced age, a very slight and sometimes intermittent diastolic murmur of aortic insufficiency has a purely functional significance.

Sudden death occurs in a great number of cases following anginal attacks—more seldom following left ventricular insufficiency with pulmonary edema or heart failure. Massive and localized infarction of the myocardium is consistently absent. The diagnosis of syphilitic aortic disease is greatly facilitated by complications involving the rest of the heart due to narrowing of the coronary ostiums in the sinus of Valsalva or to progression of the condition to the aortic valve. Unless there is a coexistent aortic aneurysm, there is not a single sign by itself characteristic of the syphilitic origin of aortic insufficiency, but rather the total of the following signs will establish the diagnosis: a rough blowing diastolic murmur with fremitus, often preceded by functional systolic murmur at the base and followed by a tambour-like, accentuated, second aortic sound. The x-ray shows an enlarged aorta and some degree of cardiac enlargement. The arteries are hard and tortuous, and a Corrigan pulse is present. The age of predilection is from 35 to 40. There is an absence of rheumatic history, and a syphilitic history can be obtained in about half the cases, with a primary infection from fifteen to twenty years previously. The Wassermann is positive in about 75 per cent.

In many of the cases showing aortic insufficiency there is an Austin Flint murmur at the apex, that is, a functional mitral mid-diastolic rumble with or without presystolic accentuation. The presence of a murmur of this character, and especially of a diastolic thrill at the apex when the aortic insufficiency is but slight to moderate, should cause one to suspect the presence of rheumatic heart disease with mitral stenosis, even though syphilis of the aorta is the correct diagnosis. In other cases an intensive to-and-fro murmur over the aortic area or left sternal border is strongly suggestive of aortic insufficiency. Without the presence of clinical signs of aortic stenosis or mitral disease, the diagnosis of pure aortic insufficiency is often

easily made in the adult, in about one-third of the cases, however, this is difficult or even impossible

The narrowing of the coronary ostia occurring in about half the cases of aortitis causes a more or less grave, coronary insufficiency as a permanent state with attacks of angina and cardiac asthma, the latter invariably being a bad prognostic sign

As the syphilitic affection of the aorta is a slow and gradually spreading process, the coronary arteries, by developing a collateral circulation, are able in spite of their narrowing to provide adequate nourishment for the heart muscle. The collateral circulation is established by the other unaffected or less damaged coronary artery and the vessels of the thorax and pericardium. For this reason we can find at autopsy considerable stenosis of one or both coronary ostia, following few subjective complaints and without previous attacks of angina

On the other hand, angina alone cannot be considered a proof of the involvement of a coronary ostium, for because of the absence of the normal function of the sclerosing aorta it occurs even in uncomplicated aortitis

Although the most common etiologic factor in uncomplicated aortic valvulitis is syphilis, this specific lesion is practically never associated with a deposition of calcium in the valves such as is seen in calcific aortic valvulitis. The clinical signs and manifestations of aortic insufficiency may be due to an acute or subacute bacterial invasion of the valves, or to acute pericarditis, or calcific aortic valvulitis, as well as being due to syphilis. In other words, there is not a single sign by itself characteristic of aortic insufficiency unless there is a coexistence of an aortic aneurysm. Cardiac pain, heart failure, and syncope occur later in the life cycle of the disease. The correct diagnosis of calcific aortic valvulitis may be made, even if the physical signs of aortic stenosis are indefinite, by careful roentgenographic examination. The presence of hypertension attributes to the difficulties in diagnosing syphilitic heart disease, since all signs attributed to the aortitis or aortic insufficiency can be explained by the elevated blood pressure

Once congestive heart failure supervenes, the course of the disease takes a progressive downward trend (in contradistinction to mitral disease), where the patient can have repeated attacks of congestive heart disease, recover, and be compensated for long periods

At present, besides inadequate specific treatment, heavy physical strain seems to be recognized as contributing to the clinical manifestations of cardiovascular syphilis. For instance, in heavy workers the statistics show an incidence of 13.5 per cent of cardiovascular syphilis, whereas in light trades it amounts to only 5 per cent. The great incidence of involvement of the circulatory system in Negroes and its appearance among them ten years earlier than in the white patient are probably due to the same physical strain on the diseased aorta

The knowledge of the electrocardiographic changes in cardiovascular syphilis is rather small compared with the great amount of clinical data accumulated. Most authors, furthermore, deal with the marked electrocardiographic changes in advanced cases or give the whole electrocardiographic problem only minor attention.<sup>2,5,7</sup> Few authors stress the electrocardiogram in the early stage and especially after the exercise test is made.<sup>7,15,21,22</sup> The significance of the electrocardiographic findings in cardiovascular syphilis are presented in the following analysis of our cases

### Analysis of Cases

At Bellevue Hospital (Columbia University), First Medical Division, there were admitted to the wards and to the cardiac clinic from 1932 to 1940, 172 cases of cardiovascular syphilis. For purposes of analysis we have divided this number into three groups

Group 1 consists of 35 cases that were autopsied. Group 2 consists of 117 cases of advanced cardiovascular syphilis which were not autopsied. Group 3 consists of 20 cases of early cardiovascular syphilis which are still being followed. This last group was subjected to an electrocardiographic study after the graduated exercise test with most gratifying results

*Group 1*—In the first group there were 32 men and 3 women. Of these, 26 were white and 9 were Negroes, their ages ranged from 29 to 65 years. In this group we found 31 cases of aortic insufficiency, 5 cases of aneurysm (2 of these associated with aortic insufficiency), and 1 case of uncomplicated aortitis. Six cases of aortic insufficiency were found in conjunction with acute coronary thrombosis with myocardial infarction

Most of the patients were admitted with congestive heart failure of short duration. The majority had syphilitic history. Most patients had no specific treatment at all, and a few had insufficient treatment. All had a

positive Wassermann Only 15.7 per cent were complicated by hypertension The causes of death were 3, acute lobar pneumonia, 2 uremia, 1, cerebral hemorrhage, 1 brain tumor, 1 portal cirrhosis with ascites, and the remainder, congestive heart failure Nine died suddenly

We were impressed by the frequency of narrowing or closure of one or both coronary ostia This occurred in 26 cases (74 per cent), 12 of which were bilateral In 9 cases the coronary ostia remained free When only one coronary ostium was involved, it was invariably the right one Only in 1 case was the left coronary ostium involved A young man, aged 33, was admitted with marked cardiac pain and died suddenly after a week His electrocardiogram showed inverted  $T_1$ ,  $T_2$ , and depressed  $ST_1$ ,  $ST_2$  Necropsy showed the mouth of the left coronary artery to be extremely narrow, with aortitis The heart was not enlarged

In another patient, aged 43, with slight aortic insufficiency and aneurysm of the transverse portion of the aorta, the electrocardiogram was normal He had an involvement of the central nervous system which masked the real cause of death—frontal lobe tumor The necropsy here again showed a normal-sized heart and open coronaries

Six cases in this group revealed, besides narrowing of the coronary ostia, coronary thrombosis of the anterior descending branch of the left coronary artery Every case except the 2 mentioned above showed a widened aorta and some degree of cardiac enlargement

Serial electrocardiographic studies revealed marked pathologic changes It is of interest that in 26 cases of coronary ostial stenosis 25 were associated with an abnormal electrocardiogram All cases in this group revealed left axis deviation with inverted  $T_1$  or  $T_2$  and  $T_3$  The T wave was inverted, isoelectric or diphasic in lead I (14 cases), in leads II and III (2 cases), or in leads I and II together (20 cases)

Heimann<sup>6</sup> refers to a notching of the ascending segment of the QRS complex which he found in 30 per cent of the cases, and he considered this sign as characteristic of syphilis Juster and Pardee,<sup>7</sup> in their series of 50 cases of syphilitic heart disease, found only 7 cases showing the notch of Heimann's illustration In our series such notching of the ascending segment was found seven times only

A prominent  $Q_2$  was present in 5 cases (14.3

per cent) While sometimes present in the absence of heart disease,  $Q_2$  is frequently associated with myocardial damage When in addition to an abnormally prominent  $Q_2$  there was an inversion of  $T_2$  and  $T_3$  with upright  $T_1$  (1 case) or an inversion of  $T_1$  and  $T_2$ , the incidence of coronary ostial stenosis or coronary thrombosis was 100 per cent (4 cases)

In this series 8 cases were encountered where a downward deflection in lead III was preceded by a small upright R and followed by an upright R' (triphasic complex) Four of these were among those cases associated with coronary thrombosis, 3 had coronary ostial stenosis, and 1 had open coronaries

Nearly all cases showed definite variations of the RS-T junction and modification of the RS-T segment The upward or downward displacement of the RS-T junction as found in these cases may develop without any modification of the T wave as a whole However, if with left axis deviation a marked depression of  $ST_1$  and  $ST_2$  is followed by a negative  $T_1$  or  $T_2$  and  $T_3$  or if ST is depressed in all three leads, it indicates grave myocardial damage (6 cases) A more pronounced cardiac enlargement is associated with negative  $T_1$  and  $T_2$

With all these changes, a widening of the QRS is frequently seen, and the prognosis becomes poor as the breadth of QRS increases Thus, the duration of the QRS complex is a matter of considerable importance in the significance of the electrocardiogram belonging to this group of intraventricular block (10 cases) An increase in the duration of the QRS was associated with congestive heart failure in 4 cases Four cases showed ventricular extrasystoles The numbers are too small to allow an opinion as to the prognostic significance of this type of electrocardiogram in cases of coronary ostial stenosis alone, but so far as they go they do not appear to be associated with conditions involving the coronary arteries

In order to better evaluate the electrocardiogram in patients with coronary ostial stenosis and patients with open coronaries, a detailed analysis follows

In the 26 cases with coronary narrowing or closure of one or both coronary ostia, 23 cases revealed left axis deviation with inverted  $T_1$  and  $T_2$  Slight or moderate depression of the ST segment in one or two leads occurred in 20 cases Five cases revealed a flat  $T_1$  or diphasic  $T_1$  besides left axis deviation There was low voltage of the QRS in all three leads

TABLE 1—A COMPARATIVE STUDY OF THE ELECTROCARDIOGRAPHIC FINDINGS IN 172 CASES OF CARDIOVASCULAR SYPHILIS DIVIDED INTO EARLY CASES (20) WITH EXERCISE TEST, ADVANCED CASES (117), AND NECROPSIS CASES (35)

	Early Cases			Advanced Cases			Necropsy	
	Number	Percentage	Exercise test Percentage	Number	Percentage		Number	Percentage
Normal records	19	95	75	19	16		2	6
Pathologic electrocardiographic findings	1	5	25	98	84		33	94
Inverted T <sub>1</sub> or T <sub>2</sub> and T <sub>3</sub>	1	5	10	78	66		28	80
Diphasic or flat T <sub>1</sub> or T <sub>2</sub> and T <sub>3</sub>	1	5	10	29	24		7	20
ST segment deflection	2	10	25	66	56		20	57
Intraventricular block	0			31	26		10	28
Prominent Q <sub>3</sub>	0			11	9		5	14
Triphasic complex	0			10	8		8	22
Low voltage	1	5		15	12		7	20
Slurred notched QRS	3	15	25	28	24		18	51
Left axis deviation	19	95	95	96	82		32	91
No axis deviation	1	5	5	21	18		3	9
Auricular fibrillation	0			8	7		2	5
Arrhythmia	0		25	16	13		7	20

in 2 cases, and 1 case showed a normal electrocardiogram. Two cases had auricular fibrillation, and left bundle branch block occurred four times. In patients without coronary ostial involvement we observed left axis deviation in all cases. Eight cases showed an inverted T<sub>1</sub> or T<sub>2</sub>. Q<sub>3</sub> was prominent in 1 case. Six cases revealed a depressed ST segment in two or more leads. Low voltage, auricular fibrillation, or bundle branch block did not occur in this group.

Turning now to the group of 6 cases of coronary ostial stenosis associated with coronary thrombosis, 4 cases showed left axis deviation with inverted T<sub>1</sub> and T<sub>2</sub>. A prominent Q<sub>3</sub> occurred four times. Two cases without left axis deviation revealed inverted T<sub>1</sub>, T<sub>2</sub>, and T<sub>3</sub>, with a prominent Q<sub>3</sub>. One case showed auricular fibrillation (Table 1).

### Case Reports

**Case 1**—W M, a garage worker, aged 38, had had ten admissions to the hospital since July, 1938. He complained chiefly of dyspnea, substernal pain, and oppression. These symptoms became progressive and more severe. In September, 1938, he entered the Polyclinic Hospital because of these symptoms and developed rapidly increasing dyspnea and paroxysmal nocturnal dyspnea, with attacks of substernal pain, squeezing in character, which became more frequent and more severe.

Physical examination of the heart revealed the point of maximal impulse in the sixth space at the anterior axillary line. A soft systolic and a blowing diastolic murmur was heard over the aortic area and the left sternal border. There was a Corrigan pulse with normal sinus rhythm. Blood pressure was 140/40.

**Laboratory Data.** Blood Wassermann was 4 plus, spinal Wassermann was negative. An x-ray of the heart revealed a moderate enlargement in all diameters and accentuation of the left ventricular curve, with minimal widening of the ascending aorta, width 7.0 cm. Neither amino-

phylline or nitroglycerin were efficacious in relieving attacks of substernal pain and depression which became more severe and more frequent. These episodes, accompanied by the simultaneous development of severe dyspnea and orthopnea, were the most striking features of his illness. Patient died suddenly on March 4, 1939.

Electrocardiogram taken January 28, 1938, showed normal sinus rhythm with no axis deviation, inverted T<sub>1</sub>, diphasic T<sub>2</sub>, prominent Q<sub>3</sub> with upright T<sub>3</sub>. Electrocardiogram taken January 25, 1939, revealed normal sinus rhythm with inversion of T<sub>1</sub>, T<sub>2</sub>, and T<sub>3</sub>, marked digitalis effect with no deviation of electrical axis. Marked ST segment displacement in leads I and II (Figs 1a and b).

Necropsy revealed syphilitic aortic valvulitis. The heart weighed 700 grams. Partial obstruction of right coronary ostium permitting the entrance of only a small probe. Left coronary rising in normal position with normal patent ostium. Neither coronary showed any obstruction throughout its course.

**Case 2**—F S, a seaman, aged 39, was first admitted January 3, 1935, with acute congestive failure. Patient had had sixteen admissions to the hospital. His chief complaint was dyspnea with frequent attacks of nonradiating substernal pain.

Physical examination revealed an orthopneic, cyanotic patient with marked distention of neck veins. His heart was markedly enlarged to the left. The point of maximal impulse was in the sixth space at the midaxillary line. There was a double harsh blowing murmur over aortic area and left sternal border. Blood pressure was 144/50, and there was a Corrigan pulse. The patient responded fairly well to mercurial diuresis and digitalis. He received bismuth and potassium iodide at the syphilis clinic. In 1938 he began to have auricular fibrillation, and his course was slowly and progressively downward. Attacks of substernal pain and paroxysmal dyspnea became more frequent. He died on February 10, 1939.

An electrocardiogram taken on January 24, 1935, showed left axis deviation with normal

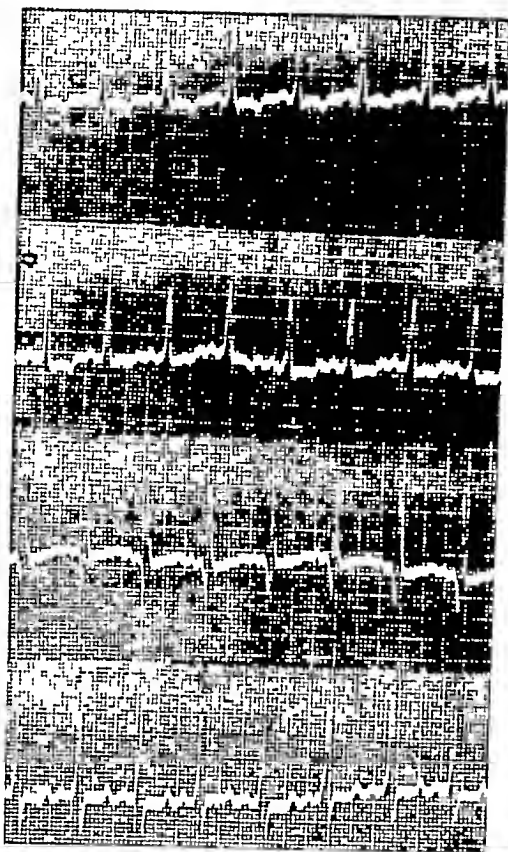


FIG 1a Serial electrocardiograms on case report. Electrocardiogram on January 28, 1938, showed normal sinus rhythm with no axis deviation, inverted  $T_1$ , biphasic  $T_2$ , prominent  $Q$ , with upright  $T_3$ . Ventricular rate 100 per minute

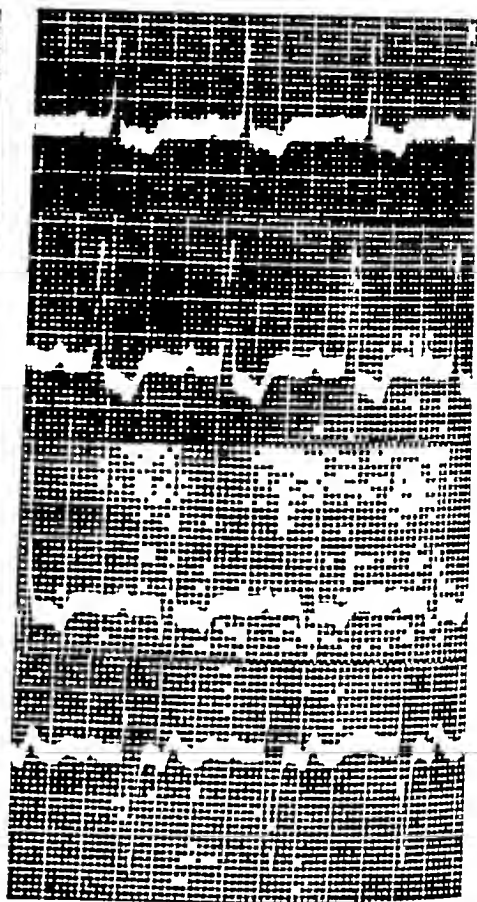


FIG 1b Electrocardiogram on January 25, 1939, revealed normal sinus rhythm with inversion of  $T_1$ ,  $T_2$ , and  $T_3$ , marked digitalis effect with no deviation of electrical axis. Marked ST segment displacement in leads I and II

sinus rhythm, flat  $T_1$ , notched and slurred QRS in lead III. An electrocardiogram taken on July 8, 1938, revealed left axis deviation with auricular fibrillation, inverted  $T_1$ , flat  $T_2$ , with biphasic  $T_3$ . An electrocardiogram taken on January 3, 1939, showed left axis deviation with auricular fibrillation, inverted  $T_1$ , with notching of the ascending segment of the QRS, flat  $T_2$ , slurred QRS with elevated ST segment and deep inverted  $T_3$ , marked digitalis effect. An electrocardiogram taken on February 4, 1939, showed left axis deviation, auricular fibrillation with auricular flutter, Heilmann's notch in lead I, inverted  $T_1$ , notched and slurred QRS in lead II, inverted  $T_2$ , slightly elevated ST segment with inverted  $T_3$  (Figs 2a, b, c, d)

Necropsy revealed syphilitic aortic valvulitis. The heart weighed 520 grains. The coronary arteries arose within the sinuses of Valsalva and were of normal distribution. Both coronary orifices were completely narrowed, yet were of ample caliber throughout the branches.

*Group 2*—We have studied and correlated the clinical course together with the electrocardiograms of a group of 117 patients who were admitted to the hospital with signs of congestive failure or intercurrent infection. Subsequently the clinical diagnosis of cardiovascular syphilis was made. None of these cases was autopsied.

Among the 117 cases analyzed, 76 (64.9 per cent) occurred in men and 41 (35.1 per cent) occurred in women. The youngest was 23 and the oldest was 78. The Wassermann test was positive in 91 cases. There were 88 white and 39 Negro patients. High blood pressure complicated 58 cases.

The clinical diagnosis was aortic insufficiency in 86 cases, aneurysm in 18, and aortitis in 25. The aorta was dilated and

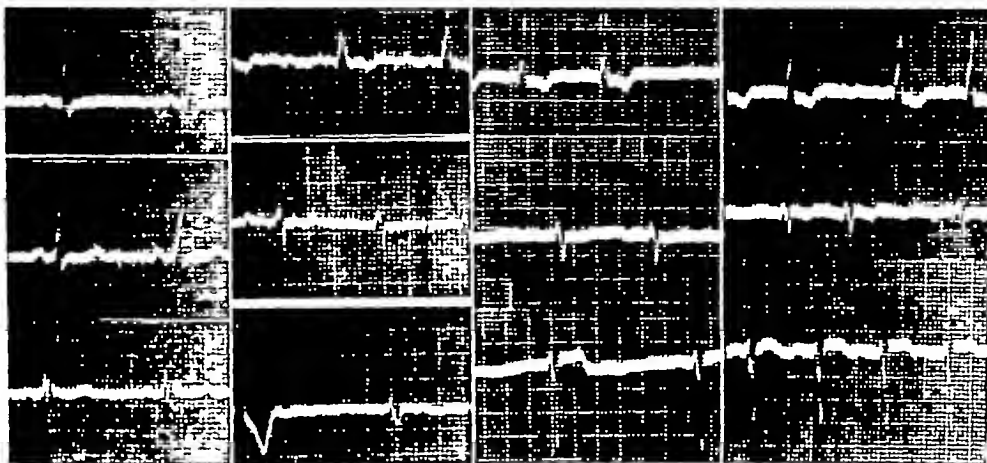


FIG 2a

FIG 2b

FIG 2c

FIG 2d

FIG 2a. Serial electrocardiogram on case report. Electrocardiogram on January 24, 1935, showed left axis deviation with normal sinus rhythm. Flat  $T_1$ , notched and slurred QRS in lead III.

FIG 2b. Electrocardiogram on July 8, 1938, revealed left axis deviation with auricular fibrillation, inverted  $T_1$ , flat  $T_2$ , with diphasic  $T_3$ .

FIG 2c. Electrocardiogram on January 3, 1939, showed left axis deviation with auricular fibrillation. Inverted  $T_1$ , with notching of the ascending segment of the QRS, flat  $T_2$ , slurred QRS with elevated ST segment and deep inverted  $T_3$ , marked digitalis effect.

FIG 2d. Electrocardiogram on February 4, 1939, showed left axis deviation, auricular fibrillation with auricular flutter (2:1) (3:1), Heilmann's notch in lead I, inverted  $T_1$ , notched and slurred QRS in lead II. Inverted  $T_2$ . Slightly elevated ST segment with inverted  $T_3$ .

widened in 85 cases, and the heart was enlarged in 93 cases. Most of the patients had a negative history with insufficient or no treatment.

The electrocardiographic changes were pathologic in 84 per cent of the cases observed. It will be noted that left axis deviation occurred in 82 per cent. A rather high incidence of inverted isoelectric or diphasic T wave (lead I 44 cases, leads II and III 8 cases, leads I and II together 22 cases) was seen corresponding with the findings of many observers. ST segment deviation was found in 56 per cent of the cases. Intraventricular block occurred in 26 per cent and low voltage occurred in 12 per cent of these cases.

**Group 3**—Another study was made of the early stage of cardiovascular involvement in a group of 20 patients, 13 with uncomplicated aortitis and 7 complicated by aortic insufficiency. There were 14 men and 6 women in this group—18 white and 2 Negro patients. Their ages ranged from 27 to 42 years, and their infection dated from a period of four to twelve years earlier. None of these patients had had sufficient specific treatment. All had positive Wassermann tests and normal blood pressures.

Aortalgia and dyspnea on exertion occurred

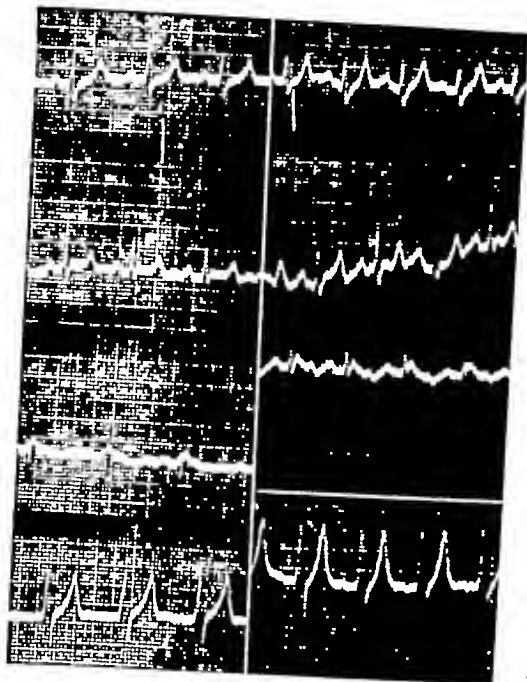
in 10 cases, 7 were without clinical symptoms. Nine showed a systolic murmur over the aortic area and a sharply accentuated, aortic, second sound. The 7 cases of aortic insufficiency showed a diastolic murmur. The aorta and heart were normal on x-ray examination in the uncomplicated cases and were moderately widened in 2 cases of aortic insufficiency.

The electrocardiogram showed left axis deviation in all uncomplicated cases but no other pathologic changes before and after the exertion test. Besides left axis deviation, the 7 cases of aortic insufficiency showed inverted  $T_1$  in 1 case and negative  $ST_1$  and  $ST_2$  in another case. The remaining 5 cases were normal. After the exertion test, 5 out of these 7 cases showed marked pathologic changes consisting in negative  $ST_1$  and  $ST_2$ , with positive  $ST_3$ , (2 cases), negative  $ST_2$  and  $ST_3$ , (2 cases), and negative  $ST_3$  (1 case), all with numerous extrasystoles from ectopic foci.

Electrocardiographic changes of the kind under discussion are illustrated in the following two case reports.

#### Case Reports

**Case 3**—E. P., a white man, aged 27, was admitted to Bellevue Hospital on February 16,



Figs 3a and b Electrocardiographic study with positive exercise test. The first (a) was taken while patient was at rest and shows left axis deviation, normal sinus rhythm, slight depression of ST junction in lead I and elevated ST deflection in lead III. The second (b) was taken immediately after the exercise test and shows a deep inversion of the T wave in lead III as a positive reaction.

1940, and was discharged on March 17, 1940. Diagnosis of meningovascular syphilis, aortitis, and coronary ostial stenosis was made. He entered the hospital because of staggering gait and numbness of feet. He had had a chancre seven years before.

Physical examination revealed that the pupils were equal and reacted to light and accommodation, with no nystagmus. The heart was not enlarged, and no murmurs were heard. The aortic second sound was greater than the pulmonary second sound. There was normal sinus rhythm, with blood pressure 120/62. There was a weakness of the extensors of the left upper extremity and both lower extremities, with definite ataxia. The sense of position was markedly impaired for both legs, with absent ankle and knee jerk. Abdominal reflexes were present.

Laboratory Data. Blood and spinal Wassermann were 4 plus. The colloidal gold curve was 0000011100. The heart and aorta were not enlarged on x-ray examination. The presence of increased spinal fluid pressure with lymphocytic cells and high protein content suggested an active process causing posterior column signs.

Two sets of electrocardiograms are shown (Figs 3a, b). The first (a) was taken while the patient was at rest and shows left axis deviation,

normal sinus rhythm, slight depression of ST junction in lead I, and elevated ST deflection in lead III. The second electrocardiogram (b) was taken immediately after the exercise test and shows a deep inversion of the T wave in lead III as a positive reaction.

Case 4.—O F, a bricklayer, aged 33, was admitted February 10, 1940, with a recent episode of intercostal pain due to a tabetic crisis. Although he could not recall having had a chancre and gave no history of gonorrhea, the Wassermann test was 4 plus. The patient had never suffered from substernal pain or paroxysmal dyspnea.

Physical examination revealed a well-developed, well-nourished adult man. His pupils were equal and reacted to light and accommodation. The point of maximal impulse was 9 cm. from the midsternal line at the fifth intercostal space. Soft systolic and diastolic murmur at the base was transmitted lower down to the left side of the sternum. There was an apical systolic murmur, normal sinus rhythm, and a Corrigan pulse. The blood pressure was 120/50.

Laboratory Data. Blood and spinal Wassermann were 4 plus. The colloidal gold curve was 3455544333. An x-ray of heart revealed no enlargement of left ventricle. There was a slight widening of the supracardiac portion of the aorta.

As in Case 3, two sets of electrocardiograms were taken (Figs 3c, d). The first set (c) was taken while the patient was at rest and shows normal sinus rhythm with no deviation of the electrical axis. The second set (d) was taken after the exercise test and reveals typical left axis deviation with frequent extrasystoles, slight depression of ST junction in lead I, T<sub>2</sub> diphasic, inverted seagull T wave in lead III. At the end of the exercise test the patient complained of sharp substernal pain with great anxiety (as of impending dissolution), which was relieved by nitroglycerin.

## Discussion

Difficulties encountered in the early diagnosis of both uncomplicated aortitis and coronary ostial stenosis are very great indeed, especially when the previous history and Wassermann are negative. In early uncomplicated aortitis the electrocardiogram is mostly normal and, in our experience, becomes abnormal only when the process spreads to the valves or involves the coronary arteries. The electrocardiogram in the majority of advanced cases of cardiovascular syphilis shows quite marked pathologic changes that are indicative of disturbed coronary circulation with cardiac enlargement and frequently digitalis effect. Although the electrocardiographic findings are nonspecific, they are of the greatest value both in the diagnosis and prognosis of syphilitic heart disease.

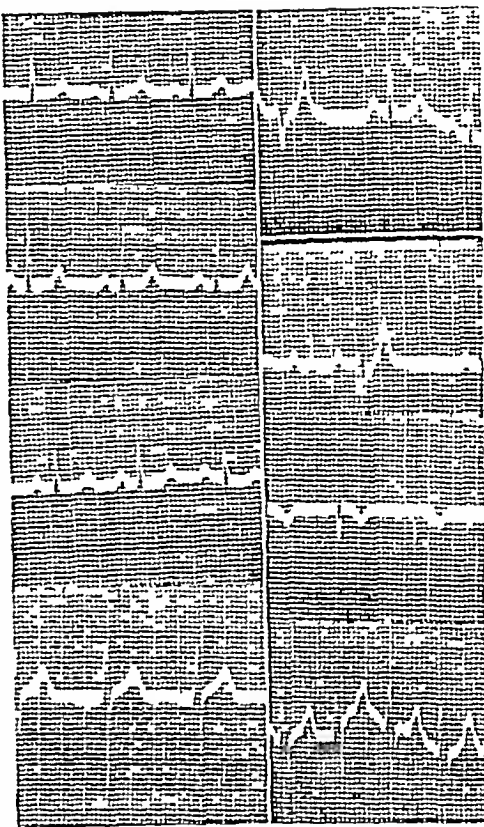
In the electrocardiogram we have a valuable means of arriving at an early objective diagnosis in these cases. Taken in the normal manner, the electrocardiogram is normal in 95 per cent of our early cases. However, an electrocardiographic study made with the graduated exercise test, consisting of rapidly climbing steps, trotting, and other means of physical exertion which impose a burden on the heart, has possibilities as yet unrealized.<sup>14</sup> With this diagnostic procedure one is able to detect transient myocardial anoxemia induced by exertion, frequently with cardiac pain. In our group of early cases only 5 per cent showed a pathologic electrocardiogram before the exercise test, whereas 25 per cent showed an abnormal response to the exercise test.

The electrocardiogram, when used in conjunction with the exercise test, is recorded not only immediately after effort but also at intervals ranging from one to two, five, and ten minutes following exertion. Thirty minutes after completion of the exercise test the electrocardiogram returns to normal. Only positive findings should be utilized, and only definite changes should be interpreted as pathologic.

Unfortunately, effort increases the heart rate and produces minor changes in the form of the electrocardiogram when the heart is normal. When judging the electrocardiograms taken during the exercise test, one must differentiate between such abnormal changes as may be attributed to myocardial anoxemia and such changes as may normally occur after exertion.

After the graduated exercise test, the patient may experience anginal pain or marked anxiety. When the test is positive, the electrocardiogram shows characteristic upward or downward displacement of the RS-T junction and modifications of the RS-T segment in two or more leads, with changes in the initial deflection and ectopic beats. This test is harmless if applied properly and graduated individually according to the daily work of the patient. Occasionally a normal exercise test is observed in aortitis, despite complete occlusion of one coronary ostium due to collateral circulation.

Wood and Wolferth<sup>22</sup> studied the electrocardiogram of patients with angina pectoris after physical exercise and found marked changes, although they concluded that this test is without diagnostic value in angina pectoris. On the other hand, both Scherf<sup>15</sup> and Wilson<sup>21</sup> have noted that the exercise



FIGS 3c and d. The first (c) was taken while the patient was at rest and shows normal sinus rhythm with no deviation of the electrical axis. The second (d) was taken after exercise test, reveals typical left axis deviation with frequent extrasystoles. Slight depression of ST junction in lead I, T<sub>1</sub> diphasic, inverted seagull T wave in lead III as a positive reaction.

test is an important diagnostic procedure in the interpretation of borderline electrocardiograms in coronary sclerosis and syphilitic coronary ostial stenosis. In young subjects, where there is an absence of coronary sclerosis, the exercise test furnishes additional objective evidence as a diagnostic procedure in the detection of the state of the coronary arteries in syphilitic heart disease. A positive test in a syphilitic subject certainly permits one to make the diagnosis of aortitis which has led to a stenosis of the coronary orifices.

In a controlled series of 50 cases under 45 years of age with presumably normal hearts or merely essential hypertension, the electrocardiographic study with the exercise test was performed and one positive result was obtained, while in our group of 20 cases of early cardiovascular syphilis of corresponding

age and sex, five positive exercise tests were observed. Thus, the incidence of a positive exercise test was twelve times more frequent in the syphilitic group than in the nonsyphilitic group.

This differentiation of the syphilitic group presents additional evidence that is of greatest value in this diagnostic procedure, permitting one to make the diagnosis of aortitis with coronary ostial stenosis. A positive test with or without angina pectoris in a syphilitic under 45 years of age is certainly strongly suggestive of aortitis with involvement of coronary orifices. After 50, a positive test with or without the presence of cardiac pain is due rather to coronary sclerosis on an inactive syphilitic basis. Therefore, it is self-evident that an electrocardiographic study made with a positive exercise test in a syphilitic case under 45 years of age enables one to make the diagnosis of latent coronary ostial stenosis.

Although there are no electrocardiographic pathognomonic signs of syphilitic heart disease, the electrocardiogram may be of the greatest value to the diagnosis and prognosis in the later stages of the disease. From the observation of our cases it is evident that the electrocardiographic changes are more marked where the coronary ostia are involved. There are, however, distinct pathologic changes in cases of open coronary ostia. The question arises as to what produces the pathologic electrocardiographic changes and whether these could not be due rather to aortic insufficiency with a coexistent cardiac dilatation than to the state of the coronary ostia.

In seeking an explanation for the appearance of an abnormal electrocardiogram in the patients without coronary ostial stenosis, it may be noted that these patients have a large heart and show the type of ventricular complex which has been attributed to marked hypertrophy and dilatation of the left ventricle. However, some cases of aortic insufficiency with an enlarged heart did not show an abnormal electrocardiogram, so that its association with left ventricular hypertrophy is not obligatory. The state of the myocardium has been demonstrated as an even more important factor than the participation of the aortic valve. It is well known that the broadest QRS complex in the electrocardiogram with the most severe alterations in the ventricular complex, as demonstrated electrocardiographically, may be found in aortitis.

In some cases the clinical diagnosis of syphi-

litic aortitis in the absence of aneurysm or other gross deformities of the aorta cannot be safely established before the advent of aortic insufficiency. The difficulties encountered in making the diagnosis have been presented, and it would be of great importance to differentiate between syphilitic aortitis and coronary ostial stenosis. Since the clinical findings and subjective symptoms do not enable us to establish the diagnosis, the electrocardiogram is of great value, being the most sensitive detector of the state of the coronary arteries. Although one is not justified in making the diagnosis of cardiovascular syphilis on the basis of the electrocardiographic findings alone, the presence of a pathologic electrocardiogram with a positive exercise test is at present the only safe method of establishing the diagnosis of aortitis with coronary ostial stenosis at an early stage.

### Summary

1 Difficulties in diagnosing cardiovascular syphilis are briefly outlined, and the importance of the involvement of the coronary ostia in prognosis is stressed.

2 Analysis is made of 172 cases. Included are 20 early and 117 advanced cases, 35 with necropsy. These comprise 39 cases of uncomplicated aortitis, 23 cases of aneurysm, and 124 cases of aortic insufficiency.

3 An abnormal electrocardiogram with progressive serial changes is found to be (in the absence of acute myocardial infarction) strongly suggestive of syphilitic aortitis with probable coronary ostial stenosis.

4 It is demonstrated that a normal or borderline electrocardiogram in a syphilitic case under 45 years of age may become positive after the exercise test is given, thus establishing the diagnosis of aortitis with probable coronary ostial stenosis.

5 The importance of the electrocardiographic study made with the exercise test is emphasized as the only safe means of establishing the diagnosis of latent coronary ostial stenosis.

6 Routine use of the electrocardiographic study and exercise test in early cases with a systematic follow-up in subsequent years is urged in order to discover cardiovascular syphilis at an earlier stage than has been possible heretofore.

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## WANTED A MEDICAL AXMAN

Under the humorous heading of "Fuel for Heating Hospital Smoking Rooms," Dr Floyd Burrows contributes some intriguing reflections to the *Bulletin of the Onondaga County Medical Society*. In a section entitled "Dead Timber," he writes

"No doubt exists in many minds that there is standing in the medical preserve at present too much dead timber. Our professional forest needs some pruning and considerable reforestation. Unquestionably there are men in our ranks who have lagged far behind the parade in marching with medical science. Their brains do not contain much more medical knowledge than they possessed when they were handed a sheepskin. An eminent physician once remarked that one must learn medicine all over every ten years. I believe that statement contained as much truth as could be squeezed safely by a pair of tongs in one sentence.

"If the standards of medical practice are to be maintained at a level consistent with modern expectations, an examination ought to be made of each practitioner every decade. I do not infer that he should take a quiz in chemistry, anatomy or physiology. But, he should be given an examination in clinical medicine and

surgery sufficient to determine whether he has kept pace with the developments of diagnosis, treatment and general management of diseased conditions of all kinds within the field of his practice. He should be on his toes in regard to early diagnosis of all maladies—especially those which need specific treatment.

"By whom such examinations should be conducted might be open to considerable debate. But it would seem that this matter could be worked out satisfactorily if it were turned over to medical men of unquestioned honesty and wide experience who have become eminent. Such men have fought over the battlefields of illness and have diversified knowledge of all maneuvers used in fighting disease. A group of such men should be able to decide the worthiness of all candidates. If a man could not pass a test he should be put on probation for one year and then given another test. In case he failed the second time he should be eliminated automatically from medical practice. If such a plan or something analogous were in vogue doctors would be obliged to study and keep up to date. Those who did would have nothing to fear, while those who did not could be eliminated and not be a serious detriment to the others."

## "HOW DOTHTHE LITTLE BUSY B<sub>1</sub>"

The results of recent investigations of vitamin B<sub>1</sub> deficiency "suggest that efficiency for prosecution of a war can be increased by the simple expedient of providing a very little more of vitamin B<sub>1</sub> than the public is receiving. This subject is also receiving consideration by those responsible for our national defense," the *Journal of the American Medical Association* declares in an editorial.

"England, locked in the struggle of total war and conscious of the importance of maintaining at high levels the strength and courage of its people, has fortified margarine with vitamin A and restored calcium and thiamin hydrochloride (vitamin B<sub>1</sub>) to flour," the editorial states. "This action was taken on advice from the Medical Research Council and with the recommendation of leaders in nutritional research. Sir John Orr and Dr J. C. Drummond were largely responsible. In consequence, ill effects from deficiency of calcium and vitamin B<sub>1</sub> will be minimized in England notwithstanding lower rations. Vitamin A will accompany whatever edible fats remain available, and calcium and vitamin B<sub>1</sub> will be supplied as long as any cereal food is left."

## POSTGRADUATE MEDICAL EDUCATION

A Sanitation Symposium was arranged for the Oswego County Medical Society at the Elks Club, Oswego, New York, on January 29, 1941, at 6:30 P. M. The program was as follows: "Milk Supplies," by Mr. W. D. Tiedeman, C. E., chief, Bureau of Milk Sanitation, Division of Sanitation, State Health Department, Albany, New York, and "Water Supplies," by Mr. C. R. Cox, C. E., chief, Bureau of Water Supplies, Division of Sanitation, State Health Department, Albany, New York. Special reference was made to emergency procedures in cases of catastrophe. This symposium was arranged and presented in cooperation with the Division of Sanitation of the State Department of Health, Albany, New York.

## WHY CHANGE?

Investigation of European medical systems on the spot by the secretary of the Wisconsin State Medical Society uncovered the significant fact that the Irish and Germans in Milwaukee are far healthier than the Irish in Ireland or the Germans in Germany.

# PUBLIC HEALTH ASPECTS OF CARDIOVASCULAR SYPHILIS IN NEW YORK CITY

JOSEPH WEINSTEIN, M D , M S P H , New York City

SYPHILIS has been recognized as one of the most pressing public health problems today in the United States and has received considerable attention both from clinicians and public health administrators throughout the country. Cardiovascular syphilis, including simple aortitis, aortic valvular insufficiency, and aneurysm, is a matter of great concern to the community because, although it is a late manifestation of this communicable disease, it affects a relatively substantial proportion of the population, often with severe disabling results, and because it is largely preventable.

In order that the importance and significance of preventing aortic syphilis may be better comprehended, it is desirable that the size of the problem be realized. This requires a consideration of morbidity and mortality statistics and an estimate of the economic waste occasioned by this disease.

## Probable Prevalence and Distribution

It must be pointed out at the outset that morbidity and mortality reports for syphilis do not present a true picture of the prevalence of this disease and its late manifestations because of incomplete reporting. However, it is believed that the following information may serve to illustrate the importance of syphilitic heart disease as a community problem.

Cohn<sup>1</sup> and Emerson,<sup>2</sup> on the basis of several sickness surveys conducted by eminent authorities, have each conservatively estimated that roughly 2 per cent of the total population on any given date will be found to have some form of recognizable heart disease. In a study of 1,001 cases of organic heart disease among clinic and private patients in New York City, Wyckoff and Lunge<sup>3</sup> found 8.6 per cent of the cases to be syphilitic in origin. Of these, 88 per cent occurred in men and 12 per cent in women, 16.3 per cent in persons under the age of 40 and 83.7 per cent above that age, with the highest peak (71.3 per cent) in age group 40-59. Applying the above ratios to the population of New York City in 1938 (7,491,790), we may reasonably assume that the number of patients with aortic syphilis

in this community probably amounted to roughly 13,000 during that year.

The available mortality statistics for organic heart disease are based on deaths recorded in accordance with the *International List of Causes of Death*, which is not so classified as to make it possible to distinguish between the different etiologic types of heart disease. Lacking such information, we may, however, utilize the recorded deaths from aneurysm which permit a consideration of the mortality trend of cardiovascular syphilis. From a medical point of view, the story of cardiovascular syphilis in the main centers about the damage the disease produces in the aorta, and aneurysm in the vast majority of instances is the result of syphilitic infection of the aorta. Referring to Table 1 and Fig. 1, it is interesting to note that the number of deaths from aneurysm per 100,000 total population in New York City, with some periodic fluctuations, has varied but slightly during the past fifteen years.

From 1.9 in 1924, the rates had gradually increased year by year to 2.5 in 1928, then gently decreased to 1.5 in 1931, and maintained this level until 1934. They have risen, during the past four years, with slight variations from 1.5 in 1934 to 2.2 in 1938. A study of the age-specific death rates (Table 2 and Fig. 2) likewise shows that no marked change has taken place in the mortality from this type of heart affection. Thus, it is quite apparent that in the past syphilis in a large proportion of the population has not been recog-

TABLE 1—DEATH RATES FROM SYPHILIS PER 100,000 ESTIMATED POPULATION, NEW YORK CITY, 1924-1938, INCLUSIVE\*

Year	Syphilis	Locomotor Ataxia	General Paresis	Aneurysm	Total
1924	7.8	1.3	4.5	1.9	15.5
1925	7.2	1.0	5.2	1.8	15.2
1926	7.1	1.2	4.5	2.1	14.9
1927	8.3	1.0	3.4	2.3	15.0
1928	7.7	1.0	3.2	2.5	14.4
1929	7.9	1.2	2.9	2.8	14.8
1930	8.8	0.9	3.1	2.0	14.8
1931	7.9	0.7	2.5	1.5	12.6
1932	8.5	0.5	2.1	1.0	12.7
1933	8.0	0.6	1.9	1.5	12.0
1934	8.7	0.8	2.2	1.5	13.2
1935	8.8	0.5	1.8	1.6	12.7
1936	10.5	0.7	2.4	1.9	15.5
1937	11.0	0.8	2.2	2.0	16.0
1938	11.1	0.9	1.8	2.2	16.0

\*Medical Officer-in-Charge of the Westchester-Pelham Health Center, Department of Health, New York City

\*Compiled from figures, *Annual Reports*, New York City Department of Health, 1924-1938

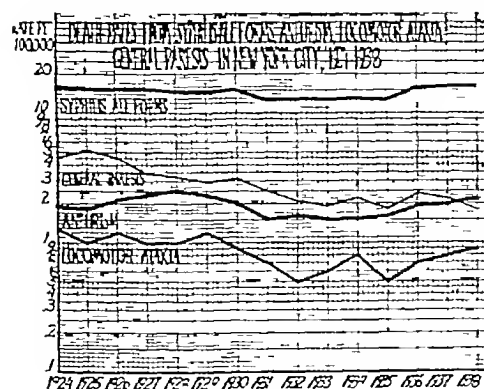


FIG 1

nized early enough or sufficiently treated to avoid involvement of the cardiovascular system. The death rates increase with age, the lowest rates are noted in the age group under 40 years, the highest in the group 60 years and over.

It is interesting to compare the mortalities from aneurysm with those of locomotor ataxia and general paralysis of the insane (Table 1 and Fig 1). While no conspicuous changes from a public health point of view have been noted in either aneurysm or locomotor ataxia during the past decade and a half, conditions differed somewhat in the case of general paresis. Here the death rate dropped from 5.2 per 100,000 population in 1925 to 1.9 in 1933 and fluctuated about this level for the next six years. The sudden and continuous drop of the curve between 1925 and 1933 may probably be accounted for, among other factors, by the introduction of hyperpyrexia and tryparsamide in the treatment of this condition.

### Economic Aspects

Aside from the humanitarian appeal, aortic syphilis is a social and economic problem of vast importance. It causes considerable suffering and disability, interferes with the working lives of the affected persons, and, because of the physical handicap and frequent need for hospitalization, it places a tremendous economic burden upon society. Emerson<sup>8</sup> has

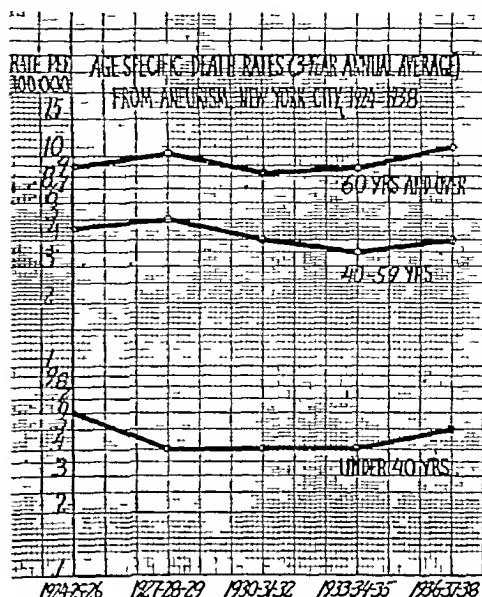


FIG 2

conservatively estimated that for cardiac patients, the population of New York bears a cost of 75 cents per capita per annum. When we apply this ratio to the population of New York City in 1938, the amount of money spent to care for cardiac patients probably amounted to more than five and one-half million dollars during that year. If 8.6 per cent of the cardiac patients in New York City, as found by Wyckoff and Lugg, are syphilitic in origin, approximately one-half million dollars were probably spent on cardiac invalids as a result of syphilis.

### The Future Outlook

The most effective way to prevent cardiovascular syphilis is, of course, to avoid syphilitic infection. In persons who have already been infected, the best time for the prevention of damage to the cardiovascular system is during the early stage of the chancre before the spirochetes begin their widespread dissemination.

A substantial reduction in the number of cases and deaths from syphilitic heart disease

TABLE 2—AGE SPECIFIC DEATH RATES FROM ANEURYSM, NEW YORK CITY 1924-1938\*

Years	Under 40 Years		40-59 Years		60 Years and Over	
	Deaths during three years	Rate	Deaths during three years	Rate	Deaths during three years	Rate
1924-1926	71	0.5	183	4.4	112	9.1
1927-1929	77	0.4	246	5.0	154	10.7
1930-1932	69	0.4	186	4.0	114	8.3
1933-1935	57	0.4	173	3.6	123	8.7
1936-1938	90	0.5	202	4.1	162	11.1

\*Compiled from figures Annual Reports New York City Department of Health, 1924-1938.

in the future may be anticipated as a result of better diagnosis and more adequate treatment of early syphilis at present. It is well established clinically that syphilis of the aorta appears on the average from fifteen to twenty years after the primary syphilitic infection. In rare instances, there is a more rapid progression. Cases of simple aortitis and aortic insufficiency can be detected earlier than aneurysm. Thus, in general, one would hesitate to predict a significant reduction in the morbidity and mortality from cardiovascular syphilis in less than an average of seventeen years beginning with the present antisyphilis campaign.

### Summary

1. An analysis of the available morbidity and mortality statistics and a consideration of the economic aspects of cardiovascular syphilis in New York City show that this disease is an important public health problem.

2. From a practical public health point of view no conspicuous change has taken place in New York City in the reported deaths from aortic aneurysm during the past decade and

a half. Apparently, syphilis in a number of persons has not been recognized early enough or properly treated in the past to avoid later complications in the circulatory system.

3. The outlook for cardiovascular syphilis in the future is full of promise provided the present efforts in the discovery and treatment of syphilis in its earliest possible stages are continued intensively for an adequate period of time.

4. Past experience has taught us that aortic syphilis will develop in a certain number of individuals despite energetic and prolonged treatment of early syphilis. In this respect more knowledge is wanted, and further efforts in the direction of research on syphilis treatment and its evaluation are indicated.

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### "A WEDGE FOR WHAT?"

The agreement entered into between Manhattan General Hospital and Local 802 of the American Federation of Musicians may have grave consequences for both the working people of this city and the medical profession, believes the *New York Medical Week*. It is contrary to most of the accepted principles for first-rate medical care and, if extended, will lead to destruction of prevailing standards of service by cut-throat competition among private hospitals for this type of business.

As envisaged at present, the plan contemplates complete hospitalization, including medical care, for unemployed and indigent members of the local and their families. This is a highly praiseworthy objective—but the union makes no secret of the fact that if its plan works successfully for the unemployed it hopes to extend coverage to include all of its 22,000 members and their families.

As described in the *New York Times*, "the new plan calls for the division of the city into eight districts, in each of which the union has retained a physician who is also a member of the staff of the hospital. These physicians will pass upon the needs of unemployed members of the local and their families residing in their districts." There is, of course, no free choice of physician. The practitioners associated with the plan are employees of the union and wholly subject to lay direction.

It will be remembered that last winter the

New York State Legislature held with the medical profession that hospitalization insurance and group provision for medical care should be kept separate because of the different administrative problems involved. The plan under discussion lumps both services together under lay control.

If this scheme is extended to the working, self-supporting members of the union, there will be a mad scramble among other private hospitals to cut in on this business. The usual competitive weapon in such circumstances is the cut price, and we may expect to see scores of schemes for cheap contract practice springing up in other unions, industrial plants, and benevolent organizations. The result will be as demoralizing to the prevailing standards of medical care as the low-grade contract practice which paved the way for compulsory sickness insurance in England.

The only way for the profession to fight this evil is to press its own plans for low-cost, high quality service for the lower income groups, declares the *Medical Week*. People are not impressed by adverse criticism, however justified, unless something better is offered them.

The spread of cut-rate contract medicine would gradually poison the system of independent medical practice. Prompt application of the principles of voluntary nonprofit medical expense indemnity insurance is the sole antidote. It should not be delayed.

Medical Officer "Is your condition organic?"  
Disabled Veteran "Doc, I can't even carry a tune."—*Medical Record*

Sickness among industrial workers is showing a downward trend, more among men than women

# THE BLOOD WASSERMANN REACTION IN 800 PRIVATE PATIENTS

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IN REVIEWING the literature of the incidence of syphilis, we found that most studies have concerned groups of clinic patients or of the general population. We are reporting, therefore, our results on 800 cases studied in our private practice in New York City. Most of these patients are American-born, well-educated adults, thus, this group differs in its personnel from most of those on whom studies have been made regarding the occurrence of the positive Wassermann test.

## Review of the Literature on the Incidence of Syphilis

Jones<sup>1</sup> in 1904 stated his estimate, based on impressions gained over a period of six years, that 75 per cent of patients, mostly Negroes, attending a large general clinic in Memphis, Tennessee, were suffering from syphilis. The incidence of syphilis has been variously estimated and sought by statistical, clinical, laboratory, and autopsy studies in the thirty-five years since then without mention of any correspondingly high figure.

Symmers<sup>2</sup> in 1916 wrote of positive Wassermann reactions in "over 25 per cent of the enormous number of serums examined" at Bellevue Hospital in New York City. He found evidences of syphilis there in 6.5 per cent of 4,880 necropsies done in the preceding ten years.

Williams<sup>3</sup> in 1920 reported the finding of a positive Wassermann reaction in 2.48 per cent of 1,806 pregnant white women and in 16.29 per cent of 2,194 pregnant Negro women admitted to The Johns Hopkins Hospital between 1916 and 1919.

Stokes and Brehmer<sup>4</sup> in 1920, in a study of 1,143 patients at the Mayo Clinic, found the Wassermann reaction positive in 11.7 per cent of 128 railroad employees, 6.1 per cent of 243 laborers, 3.8 per cent of 236 merchants and tradesmen, and 1.5 per cent of 536 farmers.

Hemsath<sup>5</sup> in 1931 reported that 4 per cent of 6,800 admissions to the New York Lying-In Hospital in twenty-one months of 1929 and 1930 showed 2 to 4 plus reactions, 884 of

these patients were Negroes, of whom the positive reactors comprised 12 per cent.

Granger<sup>6</sup> in 1932 found an incidence of 14.75 per cent of strongly positive Wassermann reactions among 2,000 private Negro patients in Brooklyn, 16 per cent showed weak or doubtful Wassermann reactions.

Warthin<sup>7</sup> reported in 1931 a diagnosis of latent syphilis, based on microscopic criteria, in 43.7 per cent of 386 autopsies done in the decade 1910 to 1920 and in 25.7 per cent of 1,289 autopsies done in the decade 1920 to 1930, or 29.5 per cent in 1,675 autopsies. This material was from the University Hospital at Ann Arbor and represented the average middle- and lower-class population of Michigan.

Rice and Goldberg<sup>8</sup> in 1936, from census studies done under the auspices of the United States Public Health Service and various agencies involving areas totaling over 27,000,000 population, allowed a conservative estimate that 5 per cent of the population of the United States had syphilis at any one time.

Holloway, Grant, and Bent<sup>9</sup> in 1937 reported an incidence of 27.4 per cent who showed a positive Wassermann reaction among 12,892 patients from clinics and hospital wards in Memphis, Tennessee. They found 5.9 per cent positive in 836 healthy Negro college students examined.

Pickell<sup>10</sup> in 1938 found a 1 to 4 plus positive reaction in 11.7 per cent of 304 white patients and 48.9 per cent of 233 Negro patients examined in his office in a small Alabama city where patients from rural sections were also included.

Usilton, Hunter, and Vonderlehr<sup>11</sup> in 1938 reported data secured from all the clinics and most of the private physicians of Chicago and collected under the direction of the United States Public Health Service and the Works Progress Administration, they showed that 0.44 per cent of the population of Chicago is constantly under medical care for syphilis.

Gastineau<sup>12</sup> in 1938 estimated an incidence of 2.4 to 3 per cent of syphilis among admissions to various hospitals and clinics in rural Indiana.

Brunet and Salberg<sup>13</sup> in 1939 report, from the Women's Division of the Public Health

From the Cornell University Medical College and the New York Hospital.

Institute in Chicago, an incidence of syphilis of 2 per cent among a group of 913 premarital examinations. They cite the July, 1938, report of the Illinois Health Department of an incidence of 1.9 per cent positive Wassermanns among 47,781 premarital tests.

In the fourth quarter of 1938 the New York City Department of Health<sup>14</sup> examined 144,723 blood specimens for syphilis, 12.2 per cent were found positive. Of 15,524 new patients admitted to the diagnostic clinics during the same period, 13.8 per cent were diagnosed as suffering from syphilis. During the six months ending December 31, 1938, the Department of Health<sup>15</sup> also reported that premarital blood tests were done on 58,903 individuals, 0.95 per cent were positive. Of the 52,585 tested at the Bureau of Laboratories of the Department of Health, 1.03 per cent were positive, while only 0.27 per cent of 6,412 tested at private laboratories were positive. It is speculated that persons knowing themselves to be infected would not apply for a license requiring a blood test. It is estimated in the same report that the incidence of syphilis in New York City is not over 1 per cent of the total population.

At the New York Hospital<sup>16</sup> between February 1, 1936, and February 28, 1939, 27,301 patients admitted to the outpatient department were subjected to a Kline test. These were men and women for the most part residents of New York City who applied to the clinic for treatment of some medical problem. The Kline test is done routinely on all medical patients before they are examined by the physician. This group represents, therefore, an unselected cross section of the clinic public. Of these, 1,270 or 4.7 per cent gave a 3 or 4 plus reaction. During the past four years, 122 or 3.7 per cent of 3,303 Kline tests done on private or semiprivate patients at the New York Hospital have given a 4 plus reaction, all of these tests were done at the request of the private physician, some specimens were probably submitted because the disease was suspected, and in many instances more than one specimen was sent for each patient.

It is of interest to note that in 1,000 patients with elevated blood pressure seen in the New York City practice of Dr. Frank S. Mearns<sup>15</sup> between 1916 and 1926 the blood Wassermann reaction was 3 or 4 plus in 3.4 per cent. Most of these patients were seen in consultation and were diagnostic problems, some of them were known to be suffering from syphilis.

These are but a few representative studies

from a great many reports concerning the incidence of syphilis.

### Our Data

In our private office between January, 1936, and March, 1939, blood specimens have been taken routinely from each new patient and have been sent to reliable laboratories for a Wassermann test. The series includes 56 men and 744 women, a total of 800 white adults. Of these there were but 3 on whom a Wassermann test was indicated, 2 of the 3 were known to have syphilis, 1 with a positive and the other with a negative Wassermann for a number of years, the other patient, a woman, gave a history of syphilis and showed signs suggestive of the disease. Several patients offering no complaints came to the office for a general "health" examination.

Of the 800 specimens submitted, 775 or 96.87 per cent showed negative Wassermann reactions. Because a negative reaction was reported for the patient who gave a history of contact and showed suspected signs, a specimen of her blood was sent for a Kline diagnostic test, this was reported 2 plus. We, therefore, excluded her from our totally negative group, leaving 774 patients or 96.75 per cent of the 800 with no suspicion of syphilis as determined by the laboratory tests. (It is to be hoped that the negative history in all of these was reliable and that the absence of physical signs of the disease with their negative Wassermanns is proof enough that they are not suffering from syphilis.)

Twenty-five specimens showed a positive Wassermann reaction ranging from plus minus to 4 plus. Of the 800 patients, 3.25 per cent were, therefore, suspected of having syphilis. Of the 25, 2 patients in whom the disease was not suspected admitted, when told the results of the tests, that they had had syphilis. Two others of the group were servants who had been sent by their employer, otherwise, had they sought medical attention, they would have been seen in a clinic. Five of the 25 were men each of these showed a 4 plus reaction. Table 1 gives the details of the series.

### Summary

In 800 patients seen in private practice in New York City from 1936 to 1939, a negative blood Wassermann was found in 96.9 per cent or in 775 patients, 1 of whom, however, showed a 2 plus Kline diagnostic test, leaving 96.75 per cent beyond reasonable suspicion of having syphilis from a laboratory point of view. Therefore, 26 patients, or

TABLE 1

Wassermann	First Specimen	Second Specimen*
Negative	774	
Negative bnt Kline 2+	1	Confirmed
+	10	2 negative 8 not repeated here
1+	3	2 negative 1 not repeated here
2+	1	Confirmed
3+	1	Not repeated here
4+	10	7 confirmed 3 not repeated here

\*From patients whose first specimen was not negative

3 25 per cent of the 800 studied, were suspected of having syphilis. Of these 26 patients, only 11 or 1 37 per cent of the 800 cases showed 3 and 4 plus reactions

### Conclusion

The incidence of syphilis recorded in the literature varies widely, depending upon the social habits and race of the groups studied, on the accuracy of the study, and on the decade in medicine. Reports range from an estimate of an incidence of 75 per cent among a southern Negro clinic group thirty-five to forty years ago to the finding of 0.95 per cent positive Wassermann reactions among 58,903 premarital tests done in 1938 by the New York City Department of Health. The New York Hospital private and semiprivate patient group is the most nearly parallel to ours. The incidence of 1 37 per cent strongly positive Wassermann tests found in our practice would be expected to be lower than their figures, where an incidence of 3 7 per cent

was found on specimens from sick patients many of whom were tested more than once. Furthermore, our group of patients is composed chiefly of women, in whom the incidence of syphilis is granted to be lower than in men. The New York Hospital group incidence of 3 7 per cent is practically the same as the incidence of 3 4 per cent positive Wassermann reactions noted in 1926 by Dr. Frank S. Mearns on a similar series of consultation patients.

The performance of a serologic test for syphilis on all patients is urged.

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### SECTIONAL MEETINGS OF THE AMERICAN COLLEGE OF SURGEONS

Dates	City	Headquarters Hotel	Participating States
March 10	Minneapolis	Nicollet	Minnesota, North and South Dakota, Iowa, Nebraska, Montana, Kansas, Wisconsin—Manitoba
March 17	Pittsburgh	William Penn	Pennsylvania, Ohio, Virginia, West Virginia, Delaware, Maryland, New Jersey, New York, District of Columbia
March 26	Salt Lake City	Utah	Oregon, Washington, California, Nevada, Idaho, Wyoming, New Mexico, Arizona, Colorado, Montana, Utah

Hospital conferences will be held in connection with each of these meetings. Fellows of the College, members of the medical profession at large, and persons interested in the institutional

care of the sick and injured are invited to the Sectional Meetings, on the final evening of each session, a meeting on Health Conservation, to which the public is invited, will be held.

### BROOKLYN UROLOGICAL SOCIETY

At the annual meeting of the Brooklyn Urological Society, the following officers were elected: president, Dr. Emanuel Salven, vice-president, Dr. James W. McManus, secretary-treasurer, Dr. Samuel E. Last.

### TO CUT OR NOT TO CUT?

'Tis better to use the knife too soon  
And find our diagnosis wrong  
Than to hear that old familiar tune  
He's gone to join the heavenly throng."

—Bennett, quoted in *Pennsylvania M J*

# SYPHILIS IN THE PREGNANT WOMAN

MORTIMER D. SPEISER, M.D., F.A.C.S., New York City

IN ORDER to handle competently the syphilitic prenatal patient, as well as to undertake the study of several problems intimately connected with this phase of syphilis, a special prenatal syphilis clinic was organized at Bellevue Hospital six years ago. While an outgrowth of the prenatal clinic this special clinic operates with the closest cooperation of the regular syphilis clinic. In the last 16,437 deliveries at Bellevue Hospital there were 790 cases diagnosed as syphilis, an incidence of 4.8 per cent. The early recognition of syphilis in the pregnant woman is essential if efficient therapy is to be instituted and if the transmission of this disease from mother to offspring is to be prevented.

## Diagnosis

The diagnosis is established on the basis of a complete history, a carefully executed physical examination, and properly controlled serologic tests. An evaluation is made herein of the data elicited with these procedures. A total of 632 cases were studied from this standpoint—580 were classified as acquired and 52 as definitely or possibly congenital syphilis.

Previous therapy was admitted in 57.2 per cent of the acquired cases. In many instances, however, these data were forthcoming only after the patient was confronted with the positive result of a serologic test. An increasing number of patients during the last few years have given such a history—not only because many of our patients have subsequently returned, but also because of the intimate relationship of this special clinic with the regular syphilis clinic many patients have been referred while under treatment as soon as pregnancy had occurred. Besides, throughout the hospital, clinicians have become more syphilis minded, and the diagnosis has been established even in patients being treated for other conditions. An increase has also been noted and a further increase anticipated as the result of present legislative measures requiring routine premarital serologic tests.

In only 9 per cent of the patients was a history obtained of known syphilitic offspring

who either died as the result of their infection or were under treatment. This did not include those children who were examined subsequent to the establishment of a diagnosis in the mother. Of course, the history of syphilis in previous offspring does not absolutely prove the presence of syphilis in the mother, for on rare occasions the infant may have acquired syphilis during its postnatal existence.

In the acquired group a history of lesions that might be interpreted as early syphilitic manifestations could be obtained in 21.2 per cent of the cases. Thus, approximately 1 out of 4 pregnant females with acquired syphilis gave such a suggestive history of early manifestations. It must be noted here that in many instances patients willfully or otherwise withheld such information regarding their syphilitic infection until confronted with the positive result of a serologic test. In 1.4 per cent there was a history of late manifestations.

Previous late abortions, premature deliveries, macerated or otherwise, as well as term stillbirths, particularly when repeated and which could not readily be explained, were interpreted as possibly syphilitic in origin and occurred in 18.8 per cent of the cases. In 24.7 per cent no significant data could be elicited in the history regarding a previous syphilitic infection.

In the congenital group a history of treatment was obtained in 65 per cent of the cases, while 88 per cent gave a history of previous lesions highly suggestive of this disease.

A properly executed physical examination at the time of admission to the prenatal syphilis clinic revealed early syphilitic lesions in 8.1 per cent of the patients, late lesions in 3.3 per cent—a total of 11.4 per cent. While spinal fluid examinations and roentgenograms of the heart and aorta were done as a routine postpartum, this information was not employed as a diagnostic factor in this study. Obviously then, 88.6 per cent of the patients with acquired syphilis were clinically latent and, therefore, revealed no physical findings on which to base a diagnosis. In the congenital group, manifestations were present in 65 per cent.

## Value of Serologic Tests

The final step in the diagnosis is the em-

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From the Department of Obstetrics and Gynecology, Third Surgical Division, Bellevue Hospital.

ployment of a serologic test or tests. At Bellevue Hospital only the complement fixation test is employed using both alcoholic and cholesterinized antigens. In 24.7 per cent of the cases the diagnosis was established on the basis of only repeated strongly positive Wassermann reactions. In 37.6 per cent there was a strongly positive Wassermann reaction as well as a highly significant or suggestive history. Many times, the positive reaction offered the first clue to the presence of syphilis, and additional data were elicited upon further scrutiny at this time. In 16.5 per cent there was a positive Wassermann reaction with associated physical findings, while in 21.2 per cent there was a negative or equivocal reaction with a history of previous treatment.

From this, one can readily see how valuable a serologic test can be in establishing the diagnosis of syphilis in the pregnant woman. The Wassermann test is done as a routine on all prenatal patients, and it is repeated in all those instances where the results are other than negative. Where equivocal results have been obtained (such as plus minus, 1 or 2 plus), a repeat Wassermann and, if possible, a flocculation test may yield a more decisive reaction. In those instances where the results of neither test are sufficiently informative, the case must be restudied from the standpoint of history and physical findings. In addition, previous offspring, husband, and mother should be subjected to examination, and the performance of serologic tests should be made upon them. Only in this fashion may one come to a definite diagnosis in these cases.

The ideal serologic diagnostic test for syphilis should possess complete sensitivity and absolute specificity, but unfortunately such a perfect test does not exist. The study by the United States Public Health Service on the evaluation of serologic tests for syphilis indicated comparable values for efficient complement fixation tests and efficient flocculation tests.<sup>1</sup> However, the fact that discrepancies may occur in either direction with both complement fixation and flocculation tests offers the soundest reason for the employment of both as a routine procedure. When the results are positive, they act as mutually supplementary aids. Many modifications of the Wassermann test, however, seem to show variations in sensitivity. This situation is unavoidable unless some central control can assure uniform results throughout the country. This is being attempted by the

Committee on Evaluation of Serodiagnostic Tests for Syphilis. The New York State Department of Health Laboratories also make an effort to clarify this difficulty by reporting accurate quantitative results of their complement fixation test. With such a careful control the results of complement fixation and flocculation tests compare very closely.

It has been stated that false positive reactions have been obtained due to pregnancy. In a study by the United States Public Health Service where the standard Kahn, the diagnostic Kline, or the Kolmer modification of the complement fixation tests were employed on 54 nonsyphilitic pregnant women, not a single serum yielded either a doubtful or a positive result.<sup>1</sup> It is also my impression that pseudopositive reactions with these tests do not occur with any greater frequency in the pregnant woman than in the nonpregnant one. However, it must be admitted that on extremely rare occasions a false positive result may be obtained. How is one to detect it? Where only a single test is done, a positive reaction always requires repetition to rule out either a clerical error or an error in the performance of the test that results in a technical false positive reaction. It has been reasonably established that tuberculosis, diabetes, anesthesia, malignancy, jaundice, fever, and hypercholesteremia are not capable of producing a false positive reaction with any degree of frequency. Biologic false positive results may occur, however—namely, those caused by the presence in the serums of actual reagins in the absence of syphilis, these reagins being capable of producing both a positive Wassermann and a positive flocculation test. This reaction is most frequently encountered in yaws and to a lesser degree in leprosy and malaria. A few other conditions, such as relapsing fever, infectious mononucleosis, etc., supposedly are capable of sometimes producing a false positive reaction, but this requires further verification. From what has been said then, the possibility of a truly false reaction is extremely rare when it occurs with the employment of repeated tests or two different tests on serums from the prenatal patient who presents no other significant history or physical findings. In these rare instances Kahn's new "verification test" with its differential temperature procedure may offer a very valuable method of differentiating the false positive from the truly positive reaction.<sup>2</sup> On the basis of this infrequency of false positive reactions, it is justifiable to treat every pa-

tient who is pregnant and whose serum persistently yields a strongly positive reaction with standard tests, otherwise one may be guilty of not having prevented the possible transmission of the disease to the offspring.

The Kahn presumptive test and the Kline exclusion test are hypersensitive and may detect the presence of reagin in a nonsyphilitic individual. A persistently positive Wassermann test and a negative flocculation test may infrequently be encountered where the negative flocculation test may be due to the so-called prozone phenomenon. By dilution this result may become distinctly positive.

Negative reactions occurring in syphilitic individuals are encountered and have been ascribed to pregnancy. With efficient serologic tests this should be an infrequent occurrence and may not be blamed entirely on the pregnancy, for a similar condition may exist in late and latent syphilis uncomplicated by pregnancy. One occasionally finds a patient who delivers a frankly syphilitic child yet whose maternal Wassermann, which was done early in pregnancy, was found to be negative. This reaction is not necessarily a false negative one because the patient may have acquired syphilis sometime after the performance of this first test. These cases could only be detected by doing a serologic test not only early in pregnancy but during the last trimester as well.

### The Effect of Pregnancy upon Syphilis

Some authorities contend that pregnancy supposedly exerts a beneficial effect upon the course of a syphilitic infection. This is apparently the diametrically opposite effect that pregnancy has or may have upon most other chronic diseases. Regarding the early manifestations, when pregnancy and infection coincide, Moore feels that the lesions are either entirely absent or much milder in character than those encountered in the absence of pregnancy.<sup>4</sup> It must be noted that an absence of a primary lesion in the nonpregnant female is not unusual and, furthermore, that when present it may be overlooked because it occurs, when the infection is genital in origin, on the cervix in 44 per cent of the cases.<sup>5</sup> The inability of self-inspection and the absence of subjective symptoms are factors which prevent its recognition. In addition, since most cervical chancres are erosive, their innocuous character hinders detection except by those physicians who are constantly on the alert. Actually then, pregnancy may not be such an

important factor in the inhibition of early lesions. It is my impression that when secondary lesions are encountered about the genitalia in a pregnant woman these lesions are apt to undergo luxuriant growth due to congestion and turgescence of the parts involved. Many observers feel that pregnancy is capable of preventing the later manifestations of syphilis, particularly involvement of the central nervous system. It is premature at this time to make any contradictory statement, but it would seem that the inhibition of central nervous system involvement while present was not sufficiently marked to feel that pregnancy was the entire factor.

### The Effect of Syphilis upon Pregnancy

While the effect of pregnancy upon syphilis offers a fertile field for continued observation and subsequent deductions, there is little doubt as to the disastrous effect of syphilis upon pregnancy. There were 95 untreated mothers with syphilis who delivered 97 babies (2 twins), and premature terminations occurred in 51.5 per cent of the cases. In 81.5 per cent there was a disastrous result—deaths due to syphilis or live born babies with syphilis—while only 13.4 per cent were salvaged free from the disease.

Faulty presentations arising in this group occurred in 12.4 per cent because of the high incidence of prematurity and stillborn fetuses. The length of labor in the women suffering from syphilis showed no deviation from the normal, and, conceivably, the only patient who might be expected to have a prolonged labor as the result of her syphilis *per se* would be the rare instance in which an ulcerative chancre of the cervix was sufficiently phagedenic in character to have caused enough destruction with ultimate replacement fibrosis to account for a cervix that was not conducive to normal dilatation. In patients with early lesions who had received no treatment, 54 per cent had a morbid postpartum course. In the entire untreated group, irrespective of the presence of lesions, the morbidity was 23.1 per cent.

Hemorrhage, placenta praevia, and premature separation were not encountered with any greater frequency in the syphilitic group than in the nonsyphilitic group.

### Treatment

The diagnosis is but half the problem, since the transmission of the disease from mother to offspring with its consequent disastrous results can only be prevented by adequate

treatment While no hard and fast rules can be set down, certain guiding principles can be formulated, bearing in mind that the arsenicals are by far the drugs of choice and that transmission of the disease takes place sometime after the sixteenth week of gestation. Any plan of treatment must depend upon the following factors

(1) The presence or absence of medical or obstetric contraindications to therapy. These may be either of short or long duration. The presence of a severe nephritis may prevent the employment of any therapy, while an acute infectious process such as pneumonia may call for only a temporary cessation of treatment. Treatment is discontinued in the face of obstetric complications such as pernicious nausea and vomiting and severe progressive toxemia. Fortunately, all of these conditions are infrequently encountered.

(2) The plan of treatment must likewise be modified according to the stage of the syphilitic process and the pregnant female with early syphilis is treated in much the same fashion as the nonpregnant one. Late syphilis of the heart and aorta may call for a modification of the strenuous antisyphilitic regimen.

(3) The length of gestation likewise alters the plan. One must realize, of course, that whenever possible treatment should be instituted at the beginning of pregnancy or as soon thereafter as the diagnosis becomes established. The patient with latent syphilis who presents herself during the first trimester of pregnancy receives alternating courses consisting of four to six doses of bismuth and eight to ten doses of the arsenical. The injections are given at weekly intervals. No rest periods are allowed and the last month or six weeks in all patients, irrespective of what plan of treatment is followed, should be occupied with the employment of the arsenical. The patient who presents herself during the second trimester is given similar alternating continuous courses with overlapping so that before the series of bismuth is completed the arsenical has been started. Whenever possible, in this group the arsenical should be started prior to the sixteenth week of gestation or as close to it as possible. In the final group of patients presenting themselves during the last trimester of pregnancy, the plan calls for continuous combined therapy starting, of course, with bismuth as should be done in all cases of latent syphilis. Fortunately this last group is becoming smaller

since patients are better educated to the needs of antisyphilitic therapy generally as well as during pregnancy.

(4) The presence of mild reactions may call for a change in the arsenical employed in its dosage, or in the co-administration of ephedrine, glucose, or liver extract. Severe reactions, however, such as jaundice and exfoliative dermatitis call for a prompt cessation of therapy.

In view of the fact that third generation syphilis is possible even though the transmission may not be as frequent as in acquired cases, it is necessary to treat persons with congenital syphilis in a similar fashion to those with acquired syphilis who are clinically latent. All patients who have had syphilis, irrespective of the amount of their previous therapy or the results of their serologic reactions, should be treated during each succeeding pregnancy. These patients are to be treated as the person with latent syphilis previously described. The prenatal patient whose husband is known to have syphilis should not be treated unless a positive diagnosis can be established in her. It is well to repeat serologic tests on her serum several times during the course of her pregnancy.

What is to be the treatment of patients postpartum? This naturally would depend upon several factors. The patient with early syphilis should be treated during her immediate postpartum period while at the hospital, and treatment should be continued after discharge so that no gap in the continuity of her treatment occurs. For patients with late or latent syphilis who have received adequate previous treatment no further postpartum therapy is required, but in those cases where previous treatment was inadequate the patient may have a rest period for one month postpartum after which treatment should be resumed. It is felt that the risk from this rest period is slight as compared to the necessity for the postpartum patient to accustom herself to her change in routine and habits resulting from an addition to her family. In the patient with early syphilis the danger of this rest period is certainly too great to be permitted.

The bismuth preparation of choice is bismuth salicylate, 1 or 2 cc of which is given intramuscularly. The arsenicals employed, such as arsphenamine, mapharsen, and neo-arsphenamine, are given intravenously. When arsphenamine is used, 0.1 Gm. is the initial dose. This is increased to 0.2 Gm. and finally

to 0.3 Gm, the latter dose is maintained, and only on rare occasions is this dose exceeded. With neosarsphenamine the initial dose is 0.2 Gm increasing to 0.3 Gm and maintained at 0.45 Gm. Rarely is the latter dose exceeded. With mapharsen, one starts with 0.01 Gm increasing gradually to 0.04 Gm and not infrequently to 0.06 Gm.

## Results of Treatment

A total of 566 cases have been studied from the standpoint of the effect of syphilis upon pregnancy and the value of treatment. In this group there were 51 congenital or possibly congenital cases, five sets of twins, and 3 maternal deaths undelivered, 2 of which resulted from reactions with arsenical therapy. This leaves 517 babies delivered of 512 mothers who had acquired syphilis. The 97 babies delivered to mothers who had received no treatment were previously discussed. Treatment given only during pregnancy salvaged 61.9 per cent of the babies while treatment given both before and during pregnancy was capable of salvaging 92.1 per cent of the babies. A disastrous result in this latter group occurred in only 4.1 per cent of the cases, while in the group who received treatment only during pregnancy a disastrous result occurred in 25 per cent of the cases. This high incidence may be explained by the fact that all cases receiving any therapy during their antepartum course only were included, irrespective as to when therapy was started or how much was given. Where treatment was begun before the sixteenth week of pregnancy this figure was appreciably reduced. Naturally as the period of gestation increases before therapy is started, one can expect a proportionate increase in the incidence of disastrous results. However, it is never too late in pregnancy to institute treatment, for some good may still be accomplished even though the disease may have already been transmitted to the unborn child. Where treatment was started any time after the sixteenth week of gestation even in the absence of previous therapy, the incidence of prematurity was reduced to 14 per cent, disastrous results occurred in 29.5 per cent, and 55.6 per cent were salvaged free from the disease. Thus, providing the damage was not too extensive already, late treatment was capable of considerably reducing the death rate, even though babies discharged alive with syphilis did not show any marked reduction, obviously because the disease may

have been transmitted before the institution of therapy.

## The Diagnosis in the Newborn

Since the aim in the treatment given the prenatal patient is primarily directed against the transmission of this disease from mother to offspring, the end results are naturally to be judged by the status of the newborn child. Where no treatment had been given and the disease in the mother was of comparatively short duration, gross evidences such as maceration in the stillborn or other skin and mucous membrane manifestations in the live born child are to be observed. However, in those instances where the disease has been of longer duration in the mother or where treatment may have been given though inadequate, visible manifestations may not arise until sometime after the first month or six weeks. Dark-field examination of the umbilical vein scrapings theoretically seems to offer a very valuable diagnostic aid, but unfortunately in our study positive results were obtained in those instances where obvious manifestations in the infant were likewise encountered. Only on infrequent occasions was a positive result obtained where no other gross lesions existed at birth. If any treatment had been given the mother, the results were almost invariably negative.

Since the placenta is the organ through which the transmission of the disease takes place, one would expect it to be the seat of gross and microscopic pathologic changes. The characteristic picture of a syphilitic placenta is most often obtained where syphilitic manifestations are also present in the newborn. This picture may be prevented or altered by therapy given the mother, even though the therapy may have been inadequate to have prevented transmission of the disease. Obviously then, syphilis may be diagnosed subsequently in some infants where the placenta showed very little if any pathologic change. Suspicious changes that might be interpreted as possibly syphilitic changes have been seen in placentas when the infant was free from the disease. Finally, the single pathognomonic finding in the placenta is the presence of spirochetes which necessitates a special and lengthy staining technic and the careful examination of numerous sections.

Positive serologic results on blood from the cord are not pathognomonic of the presence of syphilis in the newborn when the mother's intrapartum serologic reactions are also positive, for there may be a passive transfer of

reagins from mother to child. In most instances these passively acquired reagins are excreted before the first six or eight weeks of life, so that a distinctly positive reaction beyond this period, even in the absence of other clinical findings, must be interpreted as due to the formation of these reagins in the infant as the result of its infection. Were a quantitative complement fixation test employed, such as is done by the New York State Department of Health Laboratories, one might be able to follow by repeated tests during this interval either the diminution or the maintenance of a reaction. In this way a diagnosis may possibly be reached at an earlier date, particularly in those cases where other positive evidences are lacking. On the other hand, a negative test on blood of the cord does not absolutely indicate the absence of syphilis in the newborn, for the infant may develop a positive Wassermann at a later date (although this is infrequent).

X-ray examination of the long bones taken during the first week of life has been of inestimable value in many instances where clinical manifestations of the disease were lacking. The definite changes brought about by an osteochondritis are of pathognomonic value, suspicious changes, however, only warrant further x-ray study after as short an interval as a week. Negative observations may still occur in the presence of congenital syphilis.

Therefore, from what has been said, often no definite conclusion as to the status of the newborn child can be reached at the time of discharge from the hospital. Treatment should be withheld until a definite diagnosis is established. Follow-up studies are essential for a diagnosis. At the return visits physical examinations and serologic tests are repeated and evaluated. X-rays are repeated as indicated. When negative findings are obtained, the return visits are made at monthly intervals until the end of the third month. Where suggestive findings have been obtained more frequent visits may be necessary. After the third month the interval between visits may be lengthened. It is not only advisable but necessary to follow these children in this fashion for at least two years. If syphilis is present, a diagnosis is established in most instances during the first few weeks or months of life. From this period until the end of the second year of life, a few additional cases will be detected. Beyond this period only the exceptional case will develop evidences of congenital syphilis. For ade-

quate follow-up studies, the whole-hearted cooperation of the pediatrician is essential.

If treatment could be introduced early in the prenatal syphilitic patient—that is, soon after the onset of pregnancy or at least prior to the fourth month of gestation—congenital syphilis would become extremely infrequent and perhaps a rarity. This phase of syphilis control brings the most gratifying returns with a minimal expenditure of effort, providing one obtains the cooperation of the patient.

### Conclusions

1 The diagnosis of syphilis in the prenatal patient must be made early, and efficient treatment must be instituted if the transmission of the disease from mother to offspring is to be prevented.

2 Such a diagnosis should be based upon a complete history, a carefully executed physical examination, and properly controlled serologic tests.

3 The only reliable history is that of treatment for a previously known syphilitic infection and or the knowledge of a syphilitic offspring.

4 The history of a pre-existing lesion or unexplained disastrous results in previous pregnancies may be highly suggestive but needs confirmation by a physical examination and serologic tests.

5 In 88.6 per cent of the cases, physical examination failed to reveal manifestations, since the disease was clinically latent.

6 While the diagnosis in 24.7 per cent of the cases was based entirely on repeated strongly positive Wassermann reactions, it was of value in a far greater number of instances, since many patients willfully or otherwise withheld information regarding their syphilitic infection until confronted with the positive result of such a test.

7 In other cases the results of serologic tests acted as very valuable confirmatory evidence.

8 The high degree of efficiency of standard serologic tests available today justifies anti-syphilitic therapy for every pregnant woman persistently showing a strongly positive reaction.

9 The treatment of the syphilitic prenatal patient depends upon the absence of medical and obstetric contraindications, the stage of the syphilitic process, the length of gestation, and the tolerance by the patient for the drugs employed.

10 The earlier treatment is instituted the

better the results as far as the offspring is concerned, but it is never too late in pregnancy to do some good by antisyphilitic therapy

I wish to express my gratitude to Dr Miriam B Clark for her assistance in the statistical work-up of this paper

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## CHILDREN NEED CARE OF GOOD PHYSICIAN—by ANGELO PATRI

Trying to bring up a child of today without the help of a good doctor is likely to end in unrewarded effort. Most mothers need the help of the doctor who knows the child intimately, that is, the doctor who has known him since birth, and before. Very few people cannot find the money to pay for the supervision such a doctor gives a growing family. No money is so well spent as the few dollars paid him for the friendly, fatherly, professional care he gives the children.

Just why people think that money paid the doctor is money regrettably spent is beyond my understanding. "I'd rather give the money to the butcher than to the doctor," said a mother who thought it wise to give her 9-year-old boy steak twice a day. "He won't eat vegetables for me and he likes his meat."

The boy was not well. His color was bad, he did not want to play, he was irritable, and his school work was falling steadily. When we suggested the doctor she said what with meat so high and all she just couldn't afford the doctor. My notion was that if she had held on to her doctor she would not be buying so much meat, her little boy would be eating his vegetables and drinking his milk, getting his ration of meat, and getting along nicely like his classmates.

By and by the doctor had to be called. He regulated the child's routine, gave him a diet list, watched him for a while, and sent him on his way fit and hearty. His bill was \$25 and it came out of the household budget without hurting anybody. The new diet reduced the meat bill, the new routine cut down the movies, and the candy-hot-dog-pop expenses. And the boy was happy and well.

I've seen the same thing too many times not to know that the supervision and advice that a good doctor gives to the family of his patron are worth far more than any money measures. Provision for his yearly fee ought to be made with the same finality as provision for food and clothes, and paid quite as cheerfully. Any family that can dress well, run a car, attend the movies and shows can afford medical attention for the family. That item should head the list of essential, fixed charges. Insurance of several kinds is essential, but the doctor's care should precede them all.

When you find a good doctor for the family, stick to him. Do what he says faithfully. Train the children to trust him as their good friend always. Never use him as a threat or his service as a punishment. His service is farther from that idea than anything you can imagine. His work insures health which is the basis of growth, and success, in any field of life.

And pay him promptly. Doctors are servants to the needs of humanity. They answer the cry of distress at any hour of the day or night. They ease pain, they heal the sick, comfort the suffering, and make the way of death peaceful. Their service is beyond price, spiritually, but doesn't that make us doubly indebted to them? Who would shrink his own soul by withholding a debt for generous, skilled service to his loved ones—or to himself? Your doctor is your ministering friend. Acknowledge him.

—Released by The Bell Syndicate, Inc., and reproduced in the *Westchester Medical Bulletin* through courtesy of the *New York Post*

## DROWNING AND ELECTROCUTION

Teachers of first aid will find useful material in an article by R. T. Payne in the *British Medical Journal* (May 19, page 819), notes *Health News*, from which the following is quoted:

"The victims of drowning and electrocution are in a state of suspended animation.

"In such conditions the ordinary signs of death—namely, absence of pulse, heart sounds, respiration, and reflexes—are completely unreliable.

"In the case of drowning recovery is possible after immersion for a considerable period, even up to half an hour or more.

"In the case of electrocution the period of suspended animation may extend to eight hours or more and yet recovery still takes place.

"In electrical accidents do not be unduly alarmed by the knowledge that the voltage was very high, and do not be reassured by the knowledge that the voltage was relatively low.

"In all cases treatment must be immediate and on the spot. Seconds may be valuable.

"Treatment must be by artificial respiration, which must be immediate, prolonged, and persistent, and until natural breathing occurs.

"The type of artificial respiration employed must be determined by the nature of the accident, the skill, ability, and experience of the rescuer, and the presence of complications.

"The first-aid methods of resuscitation can be applied by a medical man, a first-aid worker, or a trained workman.

"The methods of resuscitation which have been described are also applicable to asphyxia following poisoning by carbon monoxide or car fumes, etc., and to asphyxia following an overdose of drugs.

"In all cases in which artificial respiration has been successfully carried out the victims must be guarded from subsequent complications by adequate care and nursing."

# VENEREAL DISEASE PROPHYLAXIS

## An Ideal Prophylactic and Technic

IRWIN I. LUBOWE, M D, New York City

THE control of venereal disease incidence is greatly influenced by the correct use of genito-infectious-disease prophylaxis. In order for a venereal disease control program to be effective it must include prophylaxis. The conference on Venereal Disease Control Work which met in Washington in December, 1936, passed a resolution to the effect that prophylaxis should be an integral part of each program.

We know that prophylaxis is, in the large majority of cases, effective and successful when used in the Army and Navy because it can be supervised and made obligatory. The soldier or sailor who neglects to safeguard himself promptly after exposure and later contracts a venereal infection because of such laxity is subject to severe discipline.

With the great increase in the Army population and the mobilization of young men as a result of the Selective Service Act, a great many Army camps are being established throughout the country. Experience has taught us that the incidence of venereal disease achieves a new high when so many unknown young men in the Army and Navy are exposed to a possible venereal infection.

On the other hand, prophylaxis among the civilian population can be neither supervised nor enforced. The experiment of maintaining prophylactic stations in civilian communities has been tried but without much success. Civilians, unfortunately, suffer from a misguided sense of modesty in such matters and, therefore, hesitate to avail themselves of prophylactic facilities that are in any sense public.

Therefore, it is essential that civilians be instructed as to the value and importance of proper prophylaxis and receive clear, complete information as to accepted methods of procedure.

Dr. Joseph Moore,<sup>1</sup> in the *United States Public Health Bulletin*, divides prophylaxis into four classifications—namely, social, chemotherapeutic, mechanical, and chemical.

The social prophylaxis may be influenced by means of law or aided by educational, social,

and religious agencies. However, the personnel of these organizations must be instructed and correctly informed by capable and skilled physicians who possess accurate and modern scientific knowledge of venereal disease.

The general public must realize that every illicit sexual exposure is a potential risk of acquiring syphilis, gonorrhea, or chancroid. The surest means of avoiding infection is, of course, sexual abstinence. However, each individual must be guided in his sex behavior by the dictates of his instincts and the routine of his personal life.

The medical methods of prophylaxis are those with which we are closely concerned, and it is these methods which may be subdivided under the terms chemotherapeutic, mechanical, and chemical.

In the chemotherapeutic prophylaxis three methods are suggested—namely, (1) the oral use of a pentavalent arsenical before and after exposure, (2) intramuscular injection of bismuth during the period when exposure may occur, and (3) the intravenous injection of arsphenamine derivatives after exposure.

The oral use of arsenicals is condemned because of its toxic action, and there is no experimental proof to indicate its efficacy.

Bismuth prophylaxis has been found to be of some benefit when used by professional prostitutes. However, its use as a prophylactic in ordinary practice of medicine is not feasible.

The suggested use of arsenical prophylaxis<sup>2</sup> intravenously has so far been limited to individuals who have come in contact with a known syphilitic. The value of this procedure in man is still dubious, especially since to be effective the arsenical must be given in large therapeutic doses. Furthermore, it is toxic and may cause anaphylactic reactions. Some physicians believe that this procedure may merely suppress an infection, with the possibility of visceral, cardiac, vascular, and neurosyphilis manifestations in the future. The present status of chemotherapeutic prophylaxis is one of doubt and uncertainty, and these mediums are neither accessible nor practicable to the average adult.

At the present time, one hope of venereal disease prevention lies in mechanical prophylaxis.

<sup>1</sup>Delivered at the American Neisserian Medical Association Meeting June 10 1940

<sup>2</sup>Clinical assistant, Department of Dermatology and Syphilology, Metropolitan Hospital, and medical inspector, Bureau of Preventable Diseases, New York City Department of Health.

laxis This is a simple, inexpensive, comfortable, and effective protection against all venereal diseases for both sexual partners simultaneously It consists merely of the use of a rubber sheath, which is applied by the male over the penis Some of the disadvantages are that it is considered abnormal and detracts from the full and complete sensation which should be experienced during intercourse There are various types, textures, and qualities of condoms in use However, since at the present time there are no definite standards for testing the effectiveness and quality of these devices, a great number of manufacturers have placed inferior products on the market The state of Oregon was the first state to set definite standards of quality in the production of condoms, and we believe that in the near future carefully prescribed rules and regulations for the quality of rubber sheaths will be established in every state in the Union, thereby assuring the user of really dependable prophylaxis

By chemical prophylaxis is meant the application of medicaments to those tissues which have been exposed in order to prevent the penetration and growth of organisms in the genitourinary apparatus We know that chemical prophylaxis,<sup>8 4,8,11</sup> if used early and according to proved procedure, will in the majority of cases prevent the acquisition of venereal disease The technic of prophylaxis as developed in the United States Army and Navy is as follows

After sexual exposure,<sup>5</sup> the patient first urinates, then the genital organs, including the adjacent surfaces of the thighs, are thoroughly washed with tincture of green soap and water Special care must be taken to lave the meatus, the glans penis, the frenum, and the foreskin. After the parts have been dried, the next step is to inject into the urethra (with a B-D urethral syringe) 1 drachm of freshly prepared 10 per cent argyrol or 2 per cent protargol The solution is retained within the urethra by the application of pressure over the glans penis with the forefinger and thumb, remains in situ for five to ten minutes, and is then allowed to exude gently from the meatus The next important procedure is the introduction into the urethra of  $\frac{1}{2}$  to 1 drachm of 33 per cent calomel ointment, followed by the vigorous munction of the preparation into all parts of the penis—namely, the glans, the frenum, the prepuce, and the scrotum The genitals are then encased in a cloth bag, which is either tied around the shaft of the penis or in some cases held in

place by a string around the waist The ointment is permitted to remain in contact with the exposed parts for several hours On the following morning the salve is thoroughly washed away

The formulas for prophylactic ointments used in the United States Army and Navy are as follows<sup>6</sup>

UNITED STATES ARMY		UNITED STATES NAVY	
	Parts		Parts
Hydrargyri chloridum mite	30	Calomel	33
Adeps benzoïnatus	65	Campbor	2
Cere alba (U S P)	5	Phenol	3
		Anhyd. lanolin	39
		Benz. lard	20
		Beeswax	3

At this point, it is interesting to note that Dr R. C. Boyden,<sup>6</sup> of the United States Navy, after a careful study of the methods of prophylaxis used in China concluded that the most desirable method was a combination of the injection of silver salts together with the application of a mercurial ointment in contradistinction to the use of an antiseptic ointment alone Dr Boyden was of the opinion that the use of ointment alone created a false sense of security, and he cited a number of known cases of syphilis which were acquired despite the careful use of prophylactic "tubes"

Dr Wolbarst<sup>7</sup> states that it is agreed that while the calomel ointment in the commercial packages protects against syphilis it is not equally effective against gonorrhea Solutions of silver, if injected into the urethra, are much more effective when used with the calomel ointment However, Lieut Comdr J R. Phelps,<sup>12</sup> of the United States Navy, in discussing the use of solutions of silver salts, states that men avoid prophylaxis because these solutions employed cause much more pain and are easily irritating to the mucous membrane, occasionally there follows a non-specific chemical urethritis

At the present time the use of chemical prophylaxis is still empirical There are a great number of tubes available which are not definitely preventive in action but merely possess antiseptic qualities to a minimum degree

The United States Navy insists upon the following formula 33 $\frac{1}{2}$  per cent calomel, 3 per cent phenol, and 2 per cent camphor By repeated laboratory examinations Dr Robert A. Bachmann<sup>7</sup> has shown this formula to be not so powerful antiseptically as might be desired It yields only 4- to 5-mm rings by the agar plate test as required by the United States Department of Agriculture,<sup>9</sup> and Dr Bachmann is of the opinion that the agar yield should be 7 to 10 mm. and should, under

examination, show sufficient strength of diffusibility to be used also as a preventive against the growth of gonococcus

In the Army and Navy<sup>10</sup> the use of a solution of silver precedes that of calomel ointment, which necessitates two distinct and separate operations. The introduction of an ointment in a special base which will add to its ease of diffusion as well as its absorbability and which also contains the proper antiseptic substances would be an ideal contribution to the field of prophylaxis. We thought it highly practicable and desirable to combine mercury and silver in a colloidal state suspended in a stearate and cholestrinized benzoated cream base. The value of colloidal mercury and silver is recognized, and their advantages over the commonly used crystalloid organic and inorganic chemicals are known to physicians and chemists.

Antiseptic studies on agar plates have shown the colloidal mercury and silver ointment to possess a high phenol coefficient.

Report of bacteriologic examinations of colloidal silver 0.05 per cent and colloidal mercury 0.2 per cent in ointment form\*.

Resistance of test organisms to phenol shows the following

	1 Minute	3 Minutes	5 Minutes
1-60	0	0	0
1-80	+	+	0

Two methods were used in testing the antiseptic properties of the ointment.

In the first method, known as the "Surface Method," the organisms were transferred from a heavy liquid culture by means of a sterile swab to the surface of the medium, and streaks were made from the periphery inward toward the center of the plate. A central disk was removed from the agar, leaving a hollow for the reception of the ointment to be tested.

In the second method, or "Deep Method," the ointment was tested to show its penetrative effect upon the organisms that had been



FIG 1 Agar plate of 0.5 per cent colloidal mercury ointment, showing an inhibitory zone of 12 mm with *Staphylococcus aureus*.

diffused throughout the agar medium. To melted agar at about 42 C., about 0.4 cc of *Staphylococcus aureus* hemolyticus was added. This was poured into a Petri plate. A disk approximately 1.5 cm in diameter was excised from the center of the hardened agar medium. The hollow was filled with the colloidal preparation and incubated for forty-eight hours. Observation after the incubation period showed a clear zone of 11 mm, and excellent diffusion and penetration were demonstrated.

The same tests were performed in dilutions of 1:5 and 1:10 by both the Surface method and the Deep method. It merits remark that the inhibitory zone of the 1:5 dilution was larger than in the undiluted form. This is probably due to the colloidal silver and mercury particles being readily dispersible in the liquid, thereby releasing their latent potential diffusive and antiseptic properties.

These examinations show the ointment to possess distinct and marked antiseptic properties as indicated by the clear zone on the agar plate. Even beyond this clear zone for a radius of 3 to 5 cm, very few colonies of the test organisms were present, whereas beyond this outer zone many colonies of *Staphylococcus* grew, indicating that there were many viable organisms present (see Figs 1, 2, and 2A).

\* This antiseptic ointment known as Pro-col was furnished by Colloidal Laboratories of New Jersey.

Method used	The agar cup method of the United States Food, Drug and Insecticide Administration, Method of Testing Antiseptics and Disinfectants
Medium used	Nutrient agar containing peptone 1 per cent, beef extract and agar
pH of the medium	7.4 to 7.6
Amount of the medium to the plate	20 cc.
Test organisms	<i>Staphylococcus aureus</i> hemolyticus taken from a fresh abscess
pH of the ointment	1-10 dilution of 8.2

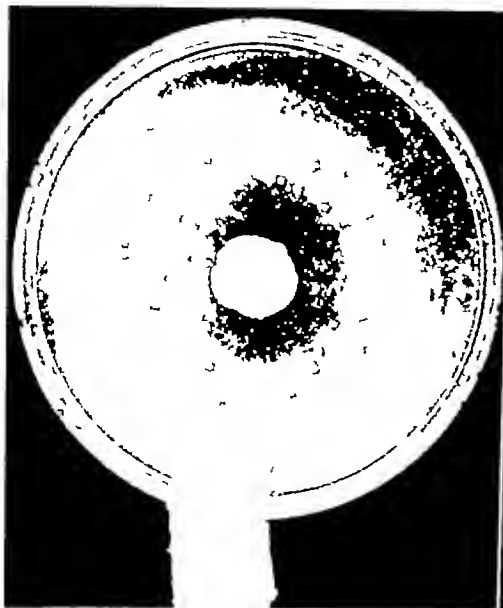


FIG 2

Fig 2 Agar plate of 0.05 per cent colloidal silver and 0.2 per cent colloidal mercury ointment, showing an inhibitory zone of 10 mm with *Staphylococcus aureus*



FIG 2A

Fig 2A Agar plate of 0.05 per cent colloidal silver and 0.2 per cent colloidal mercury ointment, showing an inhibitory zone of 12 mm with *Staphylococcus aureus*

It is a well-known scientific fact that colloids are activated when taken internally or coming in contact with tissues of the human body. The concentration of the colloidal mercury is 0.2 per cent and that of the silver used is 0.05 per cent, which is a comparatively dilute percentage but nevertheless gives a valuable antiseptic reaction when observed in the agar plate method. The ointment was found to have diffusion and penetration. Animal and human experimentation has proved it to be stable, antiseptic, and non-irritant to the mucous membranes. Pain is not experienced in the urethra after urination several hours after the prophylactic tube has been used.

This ideal venereal prophylactic is one that can be easily applied and possesses antiseptic properties that inhibit the growth of the gonococcus organism and the *Spirochaeta pallida*. At the same time it is neither painful nor discomforting in its administration. The use of soap and water after intercourse, as a preventive measure against the growth of gonococcus and chancroid organisms is highly recommended. Frequently, however, due to inconvenience and embarrassment, the use of a cake of soap and accompanying sanitary measures may be deliberately neglected. We therefore

decided that the availability of the gauze pad soaked in tincture of green soap or a sulfonated soap, which by simple moistening can be converted into a complete cleansing agent, would facilitate the conscientious use of the entire prophylactic technic.

The germicidal superiority of a colloidal mercury and silver ointment over the previously used calomel preparation has been proved by these results. By augmenting the chemical superiority of this new formula with the mechanical availability of a cleansing agent, we feel that a simplicity and effectiveness of technic have been achieved in venereal prophylaxis which will go far to minimize the incidence of genitoinfectious disease.

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## FOLKS, I GIVE YOU SCIENCE!

*Scientist discovers new chemical curiosity called Dry Water —News Item*

Now Science is a dandy thing—explaining, as it can,

The ultra ray, the Milky Way, and prehistoric man,

Supplying dope on dopes, as well as dope on protoplasm,

And helping rid a dog of fleas, when as-and-if be has 'em

Yes, Science is a dandy thing, it simplifies invention,

Advances understanding of an n<sup>th</sup>-n<sup>th</sup> dimension, Concocts a law of gravity that governs bird and beast,

Says which is north and south and west—and, therefore, which is east

Again, it wields a magic wand in diagnosing ills,

In easing varied aches and pains with ointments, salves and pills,

It tells us how electric current lights a little lamp,

And what the watt is all about, and what the ohm, and amp

Yes, Science is a dandy thing, and now it lets us know

That Wet is not the only kind there is of H<sub>2</sub>O, And so, with water on our minds (a sort of arid brain-juice),

Let's drink a toast to Science here—in good old-fashioned rain-juice!

—Al Graham in the New York Times

## WINNING THE FIGHT ON CANCER

The American College of Surgeons announces that there are 36,078 five-year "cancer cures" in the United States

These are persons who had cancer and who, five years after treatment, are free of the disease. The number is an increase of 6,000 over the total counted three years ago when the college took its last formal cancer census.

The figures are issued as evidence not only that cancer is curable but that the number of persons cured is rising notably. The first census in 1931 showed only about 20,000 five-year cures.

The census was issued on the eve of the surgeons' annual five-day meeting in Chicago. The college also announced approval of 345 institutions in the United States and Canada as cancer clinics.

In proportion to population, New Hampshire stands first in the United States in number of these approved cancer clinics. It has one clinic for each 10,000 persons. Second comes all the rest of New England, and North Dakota, where there is one approved clinic for each 100,000 to 200,000 persons.

Seven states, Nevada, New Mexico, Oklahoma, Arkansas, Idaho, Wyoming, and South Dakota, have no approved clinics. Officers of the college made it clear that lack of an approved clinic did not mean that there was no satisfactory cancer treatment available. Individual cancer specialists, it was explained, did good work in many cases where they did not have the added advantages of group clinics.

## TRAFFIC ACCIDENTS AND KIDNEY INJURY

Modern high-powered automobiles and America's superhighways with their terrific accidents have brought perplexing problems to the early recognition of injuries to the urinary tract, Dr. James C. Sargent, Milwaukee, declares in the J.A.M.A. for September 7.

"The main run of these urinary tract injuries," he states, "are quite symptomless and obscure on admission. Indeed, so obvious and commanding are the symptoms of the other accompanying injuries and so silent are those of the kidney or bladder that important hours are often lost unless the prompt discovery of kidney or bladder injuries is assured through the routine inspection of the urine to note the presence or absence of blood in all accident cases at the time of admittance."

Without such a routine, followed by x-rays, which define the exact injury if blood is present and which suggest proper treatment, Dr. Sargent maintains, "the patient with a fractured pelvis may go many hours before her ruptured bladder is discovered or the man unconscious from skull fracture even bleed to death from an unsuspected kidney injury."

## COUNTER PRESCRIBING, A FEDERAL OFFENSE

It is worth every doctor's time to study thoroughly the provisions of the new Federal Drug and Food Act. The act is now in effect and places significant restrictions on the dispensing of drugs, particularly by the pharmaceutical profession. Drugs like the barbiturates and sulfanilamide are specifically restricted in their sale, and, providing the druggist obeys the law, counter prescribing of such dangerous medicaments is definitely hampered.

Not only the druggist, but the doctor who dispenses these drugs from his office, is affected by this regulation. Physicians who dispense drugs must go to the trouble of making the complete name, dose, and other pertinent information on the package before giving it to the patient. Whether this portion of the law will be rigidly enforced must be proved by time, but it is well to note it is now a Federal Act that compels one to do so, and can be enforced.

Gone are the days when samples may be dispensed with careless abandon.

—Bulletin, Oklahoma County Medical Association

# SYPHILIS AND DIABETES MELLITUS

## A Critical Study of Their Relation to Each Other in 1,000 Cases of Diabetes Mellitus

JOHN R. WILLIAMS, M D, Rochester, New York

THE recent and renewed interest in the problem of syphilis and the continuing and growing importance of diabetes raises again the question of the relationship of these two important maladies. This topic has afforded a theme for discussion for many years and the literature abounds with articles. The earlier published studies on both diseases were faulty and inconclusive because the reported cases were not adequately controlled. Laboratory technic had not reached the stage of practicality and accuracy necessary for convincing diagnoses. To lesser extent general clinical study of these two important diseases did not receive the careful critical consideration which they are now given. Out of the mass of literature on the subject the comprehensive papers by Labbe and Toufflet<sup>1</sup> and by Lemann<sup>2</sup> are the most noteworthy. Joslin<sup>3</sup> summarizes the known facts and records his own experiences in a well-written chapter in his manual which brings the subject up to date. There is a unanimity of opinion among these authors that there is little evidence of a causal relationship between syphilis and diabetes and that the former is rarely a clinical factor in the treatment of the latter. I have carefully read most of the articles that have been published since 1920 and am of the opinion that little is to be gained by detailed reference to them. Numerous case reports of very questionable scientific value have appeared. Other articles from investigators of note are patently in error. The more authoritative studies support but add little to the conclusions of Labbe and Toufflet and Lemann. The recent literature is comprehensively and fairly considered by Lemann so that further reference to previous writing will not be made.

In this study I wish to restate some of the important questions which constantly arise and to answer them in the light of my own experience. Before proceeding to a discussion of these questions, it would be well to define the terms employed. What is meant by diabetes? In many published studies, diabetes

is any condition wherein a reducing substance to copper salts is found in the urine. In some instances the diagnosis has been based on excessive urination associated with loss of body weight. What is syphilis? Here is an even greater opportunity for error. Many of the statistical diagnoses of syphilis are based solely on positive or even doubtfully positive Wassermann tests.

True pancreatic diabetes, which is being considered in this report, is a deficiency disorder dependent upon pancreatic dysfunction. It may be influenced or modified by an associated disturbance in the pituitary body, the suprarenals, or the thyroid. There is clearly a measurable disturbance in glucose metabolism with a definite relation between food intake and urine sugar output in true pancreatic diabetes, whereas in many of the states that are confused with this disorder no such relationship exists. It is because of the inclusion of such faulty data that many of the published studies are of limited worth.

In the evaluation of any therapeutic procedure or test of diabetes, the following factors must be borne in mind:

- 1 Diabetes is a rapidly progressing disease process in the young and is difficult to control. In the middle-aged and elderly, the converse is true.

- 2 Acute diabetes or diabetes of recent onset at any age responds readily to both dietetic and insulin therapy for several months to a year. In the young, it then becomes a retrogressive process, in the middle-aged and elderly, it may remain at a fixed state or become less severe.

- 3 If these facts are disregarded, conclusions as to therapeutic procedures may be worthless. Many a remedy for diabetes has been acclaimed and advanced as having definite value because the observed clinical improvement was mistakenly attributed to a given remedy, whereas it has been due to the natural processes of physiologic adjustment.

- 4 Furthermore, in the study of diabetes the criteria by which progress is measured are frequently faulty. Diabetes is a disorder characterized by deficient glucose

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metabolism in which there is a definite relation between food intake and urine sugar output. Ultimately, all of the excessive or unutilized food sugar in the body is either burned or stored to be used later. This physiologic process may take place in one day or it may occupy several days. If these statements are true, it follows that conclusions based on inaccurate diets and casual qualitative urine sugar examinations are grossly inaccurate methods of measurement. Yet these are the methods that are most frequently employed in the study of diabetic therapeutic procedures. The limitations of this paper will not permit a further discussion of this point. Sufficient to say that in any study of this sort only old, tried, and tested cases, whose glucose metabolism is fixed, should be used. The food intake and glucose utilization should be studied with methods of accuracy over periods of several days. The blood sugar level is not a measure of glucose metabolism and, if relied upon as an index to therapeutic procedure, will give grossly misleading results. I have treated this subject of the criteria for the interpretation of diabetes in another study soon to be published.

Even more difficult than diabetes is the interpretation of the clinicopathologic phenomena associated with syphilis. Among physicians generally, and in some clinics, the presence of a single positive blood Wassermann is accepted as *prima facie* evidence of syphilis. While it is probably true that the majority of individuals who show a positive serologic test have or have had syphilis and that the test, therefore, has serious import, it is by no means to be accepted unconditionally as conclusive evidence of existing active or even latent disease. Moore<sup>4</sup> in the early chapters of his manual discusses in detail and supports this point of view.

Not infrequently the doubtful tests familiarly designated as 1 or 2 plus are accepted as evidence of syphilis. Experts in the field of syphilology, of course, are thoroughly familiar with the significance and limitations of the Wassermann test, but this cannot be said of general practitioners and many medical authors.

A brief résumé of the recent teachings regarding this important laboratory procedure may not be amiss.

1 A 4 plus reaction to the commonly employed antigens means that the blood under test contains the minimum titer of antiserums to justify the conclusion of a

definite syphilitic response. The titer may run far higher than the indicated minimal response of 4 plus, indicating a very strong reaction. If the titer is less than the accepted minimal response, however, it means that the reaction is so feeble as to be of doubtful significance.

2 The Wassermann reaction is more strikingly evident in the young and in the active stage of the disease. It tends to disappear with advancing years. It is frequently present in individuals in whom the syphilis is a healed lesion and in whom no clinical or anatomic evidence of the disease can be demonstrated. The question of what is and what is not a syphilitic lesion is still a matter of controversy among pathologists. It is freely recognized that certain unusual disease states and acute infections may give rise to reactions that are indistinguishable from the accepted Wassermann test. The institution of vigorous antisyphilitic treatment on the basis of the Wassermann test alone is a questionable procedure and fraught with dangerous possibilities.

Severe diabetics, that is to say, those patients with low carbohydrate tolerance requiring large doses of insulin and whose metabolism is difficult to adjust, frequently show subpositive Wassermann reactions with one or more antigens. This condition is inconsistent and seems to vary with the nutrition of the patient. In this series there are 23 such cases. Antisyphilitic treatment for these serves no useful purpose and is usually upsetting.

To determine the significance of the Wassermann test in the absence of clinical evidence of syphilis, a study was made of the records of the Strong Memorial Hospital. From 1926 to 1936, inclusive, 312 patients were found to give a 4 plus blood test on one or more occasions. None of these patients presented any historical or physical evidence of syphilis, although in a few instances its possibility was conjectured. Of these 312 cases, 14 died and came to autopsy. The technical procedure of the pathologic department is as follows. A careful inspection is made of all of the organs of the body, following which a routine histologic examination is made of the various tissues. By this technic, these 14 cases presented no anatomic evidence of syphilis, disease and death being ascribed to a variety of causes including carcinoma, aplastic anemia, erysipelas, pneumonia, and other infections. These individuals may have had syphilis at

some time, but it was not a factor in their terminal illness nor was it apparent at autopsy. This limited observation supports the opinion that the Wassermann test is not conclusive evidence of the presence of either active or latent syphilis. Inferences based upon the interrelationship of syphilis and diabetes should be supported by other evidence than the Wassermann test.

As to the influence of syphilis on the course of existing diabetes, it might be well first to consider the influence of infections generally on the disorder. Physicians have long known that infections of one kind or another may be serious complicating factors in diabetes. Likewise, it is known that infections vary greatly as to their seriousness as a complication. The same type of infection may affect different patients in widely varying degrees. For example, a simple cold in one case may be unimportant, whereas in another it may greatly upset the glucose metabolism. The same may be said of carbuncles and pneumonia. As a rule, localized infections, unless severe, have little or no effect on diabetes. At this time it may be well to observe that acute infections of any kind have a greater influence on glucose metabolism than do purely degenerative lesions such as sclerosis, except those which involve the pancreas.

In the light of these observations we may now consider syphilis as a complicating factor. If the disease is to affect the diabetic state, it should do it either in the stage when it is a generalized inflammation or when the syphilis directly attacks the tissues responsible for the metabolic failure. Syphilitic disease is rarely characterized by severe temperature reaction. Except for the transient skin and gland lesions it is usually exhibited as a fibrosing and sclerosing process involving the vascular and central nervous systems and is benign in character and insidious in symptom complex. The important variation from this is the rare, acute, inflammatory, explosive reaction of the visceral *gumma* of the tertiary stage. But this particular lesion to cause diabetes would have to involve the pancreas. The rarity of syphilitic pancreatitis, excluding congenital syphilis, is indicated by the fact that in the approximately 4,800 necropsies that have been performed in the Strong Memorial Hospital not a single case has been discovered.

With the foregoing conditions and criteria in mind, I attempted the study of the significance of syphilis in 1,000 clearly established standardized cases of diabetes mellitus. Each

of these patients was examined clinically for syphilis and had one or more blood Wassermann tests made. It is interesting to note that in the selection of these 1,000 cases of definitely proved diabetes it was necessary to reject 275 patients who had a questionable metabolic disturbance, so that they are classified as patients with doubtful diabetes. In many published reports on this subject, the inclusion of these doubtful cases introduces a positive factor of error.

The data bearing on syphilis in the 1,000 patients suffering from diabetes were as follows:

Cases showing a 4 plus Wassermann reaction to two or more antigens	20
Cases showing Wassermann reaction less than 4 plus or affecting only one antigen	23
Cases showing positive clinical evidence of syphilis and positive serologic tests	17
Cases in which diagnosis of syphilis is probable but not clearly proved	9
Cases in which diagnosis of syphilis is based on doubtful Wassermann reactions and questionable clinical data	17
Cases in which the positive and questionable evidence of syphilis definitely preceded the diabetes	17
Cases in which the evidence of diabetes preceded that of syphilis	0
Cases in which there was a lapse of several years between the onset of the syphilis and that of the diabetes	15
Cases in which the evidence of the onset of syphilis could not be definitely ascertained	2

As for the effect of syphilitic treatment on the course of diabetes mellitus, 17 cases were treated, as indicated, by approved methods. Varying degrees of improvement were noted. There were no unfavorable reactions. During these treatment courses, the glucose metabolism of each case was critically studied from the standpoint of glucose utilization, blood sugar levels, insulin requirement, body weight, and general well-being. In no case could it be said that the metabolism of the diabetes was significantly enhanced by the treatment of the syphilis. The detailed data of these studies number many hundreds of daily observations. No useful purpose would be served by publishing the data, they are, therefore, omitted.

## Conclusions

1 In a series of 1,000 proved standardized cases of diabetes mellitus, syphilis (active or latent) was demonstrated and treated in 17 instances. This ratio is in accord with the experience of other observers and conforms to the incidence of the disease in the general population.

2 The Wassermann test is a valuable diagnostic aid but by itself is not a conclusive index to the presence of syphilis

3 There is no causal relationship between syphilis and diabetes mellitus

4 Syphilitic pancreatitis in adults is a rare phenomenon

5 The treatment of active or latent syph-

ilis has little or no effect on the metabolism of diabetes mellitus

## References

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- 2 Lemann I I Am. J. Syph. 13 70 (Jan.) 1929
- 3 Joslin, E P Treatment of Diabetes Mellitus Philadelphia Lea & Febiger, 1935 pp 444-447
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## "DRAFT THE DOCTORS"

The tragic state of unpreparedness that has spelled bitter defeat for the European democracies must not occur here, declares the editor of *Southwestern Medicine*. Medicine must do its part. In case of armed conflict there will be broken bodies to mend, there will be last rites of mercy to perform. There must remain behind those to care for the civilian population. Wars usually bring epidemics—new problems to public health will arise. How well prepared is American medicine?

A number of the younger physicians proudly hold commissions in the reserves of the Army and the Navy. Patriotically they have worked at training problems, trying to better fit themselves for their posts. But so many are needed, and so few have responded. Plans to draft manpower, industry, and money should not omit the drafting of medicine.

Every physician in this country should be drafted, assigned a post at home or in the field, he says. The income of those left at home should be drastically controlled. Any excess over the scale paid the armed services should be pooled for the benefit of those who had to leave often good paying practices for the small remuneration of the armed services.

If there should be no profiteering in industry, neither should there be in the professions! If the younger physicians are to offer their very lives as a pawn to destiny, let the older ones at home at least offer a portion of their monetary gains!

Pretty speeches to the young man leaving a family behind, hoping to support them on the meager salary of a junior officer, are simply not enough. That young man is no fool—he knows that a shattered practice, however good it may have been, will not feed his children. He will rightly resent any attempt on the part of those remaining behind to cash in on his withdrawal from the field. Young men who know they must go at the first call are demanding in growing strength of tone that organized medicine work out and institute a plan fair to all. They say they only want an even break.

The problem is squarely up to organized medicine. And, if our own bodies do not face it, study it, answer it correctly, depend on it that the government of the United States must and will answer it for us.

## THE "COSTS OF MEDICAL IGNORANCE"

Ignorance of the most elemental facts of human physiology and anatomy on the part of the masses of our people makes them easy prey for all sorts of cults and nostrum vendors, said Dr. Francis F. Borgell in a presidential address before the Medical Society of the State of Pennsylvania on October 1. This ignorance leads to the ready acceptance of every concept of disease and its treatment as long as it has the appeal of simplicity. The uninformed have visions of perfect health by alkalization, vitamins, laxatives, bizarre diets, health foods, and so on ad nauseam. The average individual has a more comprehensive knowledge of the workings of his automobile than he does of his own body, yet he will call in an expert to cure the ills of his car but is slow to consult the expert when his human machinery fails to perform properly. The basic problem is not the "costs of medical care" but the costs of lay ignorance of medicine.

The truth of this statement can easily be seen. We need but consider the millions of dollars spent on all sorts of cure-alls, self-medication intensively advertised by press and radio. We need but witness the throngs that follow the lures of the Pied Pipers playing the tunes of foot adjustment and goat-gland implantation. The assumption that the masses are clamoring for medical care at the hands of the trained profession but which they cannot secure because they cannot pay the price is not justified in the light of the millions diverted to the coffers of patent medicine concerns, cults, quacks, and charlatans. The continuous battle by the medical profession for legislation intended to protect the people from their own folly and ignorance only emphasizes the point. Intelligent health consciousness is the foundation needed, more than anything else, upon which to build a sound program of public and individual health. Health consciousness will be stimulated in direct proportion to the degree with which this ignorance is dissipated. Herein lies one of the most fertile fields for our public health departments, local, state, or national.

The family physician cannot be eliminated from any program of public health. He must be an integral part to make such programs fully effective. Every move to replace him by impersonal governmental agencies will eventually tend to defeat real better health objectives.

Diagnosis by intuition is a rapid method of reaching a wrong conclusion—*John Chalmers Da Costa, M D*

Lj dia had four children named Eenie, Meenie, Minnie, and Edgar—she didn't want no Moe—*Milwaukee Medical Times*

# CHRONIC TONSILLITIS IN SECONDARY SYPHILIS— DIFFERENTIAL DIAGNOSIS FROM DIPHTHERIA AND VINCENT'S INFECTION

## A Report of 23 Cases

EVAN W. THOMAS, M D , and DAVID H. GOLDSTEIN, M D , New York City

IT IS well known by most syphilologists that secondary syphilis may be the cause of a chronic tonsillitis which in appearance is indistinguishable at times from diphtheria and Vincent's infection. This is not always appreciated by the medical profession. Of 23 cases of severe chronic syphilitic tonsillitis, observed by us from January, 1937, to June, 1939, 20 were misdiagnosed over varying lengths of time by private physicians or clinics prior to their admission to the syphilis wards of Bellevue Hospital.

We have included in this group only those patients who sought medical advice solely because of a severe chronic sore throat. The series does not include those who had injected throats with or without ordinary mucous patches, a condition which occurs in over 50 per cent of patients with secondary syphilis. During the period under consideration there were 419 admissions to Bellevue Hospital for early syphilis. The incidence of the severe type of chronic tonsillitis was 5.5 per cent.

By incorrect diagnoses we mean cases in which the possibility of syphilis was not seriously considered by the examining physician, despite the fact that in many instances a careful search would have revealed other signs suggestive of the correct diagnosis. In some instances syphilis was suggested as the cause of the associated rash, but in none of the 20 misdiagnosed cases was syphilis regarded as the fundamental cause of the throat infection.

In this series, before the diagnosis of syphilis was seriously considered, 4 patients had attended nose and throat clinics at least once, and 1 had attended weekly for over a month before a rash was noted and a Wassermann test taken. Four had been seen by private physicians, and 12 had attended general medical services. In 3 cases the diagnosis was missed by physicians from whom consultations were requested. The institutions

and physicians visited by the patients were widely scattered, and not all of them were located in New York City. Included within the series were several sailors and young men who had attended hospitals or clinics in various cities because of their sore throats.

There were 15 instances of membranous tonsillitis and 8 of the ulcerative or follicular type. The lesions were bilateral in all cases. Marked hoarseness was present in 2 and a history of severe dysphagia was noted in 3. The duration of symptoms prior to diagnosis was under two weeks in 5 cases and from two to three weeks in 4 cases, 12 had symptoms for a period of from four to eight weeks, and 2 had symptoms for over three months. Three patients had been isolated because of a diagnosis of diphtheria and 1 had received diphtheria antitoxin before the discovery of syphilis. On 1 a tonsillectomy was performed which did not cure the sore throat. The diagnosis was not made in this case until the patient complained of sores about the anus. It was then found that he had condylomata lata which were probably beginning when the tonsillectomy was performed, for he gave a later history of itching and soreness about the anus at the time of operation. He attributed his symptoms to hemorrhoids.

By the time the diagnosis of secondary syphilis was established, all but 1 of the 23 patients had a skin rash. The sore throat apparently occurred from a few days to several weeks prior to the rash in 20 cases. Actual chancre were observed in only 3 patients, thus accounting in part for the delay in diagnosis. An additional 4 gave a recent history of genital sores suggestive of initial syphilitic lesions. Three had relapsing secondary syphilis following inadequate treatment for previous lesions. In every case a strongly positive blood Wassermann reaction was found. In only 7 instances were spirochetes suggestive of *Treponema pallidum* actually demonstrated by dark-field examination. In every case, however, the history, the rapid healing of the throats following one injection of an arsenical drug, and the positive blood Wassermann reactions established the diagnosis. Prior to

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From the Department of Dermatology and Syphilology, New York University College of Medicine and Third Medical Division (New York University), Bellevue Hospital, service of Dr. Edward R. Maloney.

their admission to Bellevue Hospital, 6 patients had had throat cultures for diphtheria, 3 of which were reported as positive and 3 as negative. One patient was transferred from the Willard Parker Isolation Hospital where secondary syphilis was found, although throat cultures had been reported as positive for Klebs-Löffler bacilli.

In the majority of cases Vincent's angina was the original presumptive diagnosis, in spite of the fact that prior to hospitalization only 2 were reported as having had positive smears for that infection. It is possible that if routine throat smears had been made on our wards more of the series would have shown the organisms of Vincent's angina. It is a well-known fact that fusiform bacilli and spirochetes are frequently found in cases of stomatitis and tonsillitis that are not caused primarily by these organisms. We have found them occasionally in cases of stomatitis due to pellagra as well as in syphilitic sore throats. Rapid cures were obtained in the former cases by the administration of nicotinic acid and in the latter by antisyphilitic drugs.

The diagnosis of syphilitic tonsillitis in most cases seems easy in retrospect, but it must be remembered that there is nothing characteristic about the sore throats of secondary syphilis. They may present any picture from mere enlargement of the tonsils or mild inflammation to deep ulceration or a thick membranous exudate. For physicians unaware of this fact, the throat lesions tend to make them less suspicious of syphilis than they otherwise would be. Even the presence of a rash, especially if it is unassociated with an obvious chancre, may not suggest syphilis. The following case illustrates this.

### Case Report

A white woman, aged 20, entered Bellevue Hospital on May 20, 1938, complaining of a sore throat of three weeks' duration. This had become worse in the week preceding admission to the hospital, when difficulty in swallowing, malaise, and feverishness were experienced. A skin rash was noted six days before admission. Her past history indicated that she had never had diphtheria and that her own and her husband's blood Wassermann reactions had been negative four months before the onset of her sore throat. The physical examination on admission to the hospital revealed a dirty white necrotic exudate forming a thick membrane on both tonsils and extending over the uvula. There was no bleeding when the membrane was removed. Small bilateral cervical nodes were noted as being slightly tender. A blotchy red

macular skin eruption was described as being present on the arms and trunk. The temperature on admission was 101 F, but the patient did not appear acutely ill and subsequent temperatures were normal. The blood leukocyte count was 10,800 with 86 per cent polymorphonuclear cells. Direct smears of the tonsils were reported as negative for Klebs-Löffler bacilli and positive for spirochetes and fusiform bacilli. The diagnosis was ulcerative membranous tonsillitis (Vincent's) with diphtheria to be ruled out by culture. A secondary diagnosis of toxic erythema was made, although the possibility that the rash might be due to syphilis was suggested. A routine blood Wassermann test was taken, but the report was delayed for five days. In the meantime two consultations confirmed the opinion that the tonsillitis was due to a Vincent's infection and that the rash was a toxic erythema. Three throat cultures were negative for diphtheria, and on the fourth day of hospitalization, before the blood Wassermann test had been reported, a request was made for an opinion as to the advisability of giving arsphenamine for the Vincent's infection. One of us saw the patient at this time and attempted a dark-field examination of fluid taken from the tonsils. No spirochetes were found, but the diagnosis of secondary syphilis seemed probable. The blood Wassermann test was reported as strongly positive on the following day. She was then given arsphenamine and her tonsillitis healed within three days after the first injection.

As a matter of fact this patient was diagnosed more promptly than most of the others in our series, but it has been reported in detail because it illustrates several features that are important in making differential diagnoses.

1 Fevers in our series were conspicuous by their rarity, though they may occur. Only 5 of the 23 patients had temperatures at any time over 100 F, and only 2 of these reached a level of 103 F.

2 None of the patients appeared acutely ill as in the average case of diphtheria or sore throats due to pyogenic organisms.

3 In every case the throat and tonsillar lesions healed with amazing rapidity after an injection of one of the arsenical drugs. The average time for healing was two to four days. Skin eruptions invariably took much longer to disappear.

4 Even when throat smears are positive for a Vincent's infection, before accepting that diagnosis a blood Wassermann test should always be taken. Had the patient reported above been treated for Vincent's angina with arsphenamine in the absence of a blood Wassermann test, the throat lesions would have cleared rapidly but the diagnosis of secondary syphilis would have been missed.

We are aware that in some cases the diagnosis of secondary syphilitic sore throats is difficult. This report is made for the purpose of raising the index of suspicion of early syphilis in all cases of chronic sore throats. Since we collected these cases, a patient was seen who had attended an ear, nose, and throat clinic for four weeks and had been given an appointment for a tonsillectomy when a routine blood Wassermann test, taken because the patient was a hospital employee, was reported as 4 plus. No evidences of primary or secondary syphilis were found except ulcerative tonsillitis. *Spirochetes* suggestive of *Treponema pallida* were seen on dark-field examination of material aspirated from the tonsils, but they could not be regarded as absolute proof of secondary syphilis. In view of a positive blood Wassermann test and the history of a negative test taken one year previously, the patient was treated for early syphilis with prompt healing of the tonsillitis. No one could possibly have made the diagnosis of secondary syphilis in this man by inspection, but the case emphasizes the importance of taking blood Wassermann tests on every case of chronic tonsillitis of uncertain etiology.

That this is not generally realized by the general practitioner seems evident from the cases reported here, and, in spite of the excellent discussion of the diagnostic difficulties in chronic tonsillitis due to early syphilis given by Stokes,<sup>1</sup> a review of the literature reveals little emphasis of this important clinical entity. In 1935 Brittingham<sup>2</sup> reviewed 301 cases of early syphilis in which he observed "throat or tonsil disease" in 35 per cent. He states "In most of these patients the tonsils were enlarged and presented dirty ulcerations. In many of them, however, the tonsils were smoothly and clearly enlarged, with very little evidence of other inflammation such as redness. In the former group, secondary infection was undoubtedly present and it would be impossible to differentiate such tonsils from those infected with the streptococcus or the mixed throat infections which are frequently seen in patients without syphilis." While Brittingham's paper is an excellent presentation of the clinical findings, insufficient emphasis is made of the membranous type of sore throat and its similarity to diphtheria. Moreover, while secondary infection may account for the ulcerative type, such infection must be minimized in the light of the prompt healing after arsphenamine.

Stokes has well phrased the caution, in

emphasis of which these cases have been reported, in the following statement "The taking of blood Wassermann tests more frequently, if not routinely on sore throats, especially if they show evidence of chronicity, and the habit of stripping patients for examinations, even for so small a matter as a sore throat, would lead to the detection of a good deal of secondary syphilis in its incipency."

### Summary

1 Twenty-three cases of chronic tonsillitis due to secondary syphilis are reported, 15 of which were membranous while 8 were of the follicular variety.

2 A mistaken diagnosis of diphtheria, Vincent's infection, or simple tonsillitis was made in 20 instances.

3 The characteristic features of this entity are discussed, and the prompt response to arsenical drugs is pointed out.

4 It is urged that every patient with a chronic tonsillitis be given a Wassermann test and a thorough examination for stigmas of secondary syphilis.

December 10, 1940. Since this paper was written we have seen on the wards of Bellevue Hospital an additional 19 cases of chronic tonsillitis which fall in the same category as the patients reported above. Two of them had tonsillectomies without benefit before the diagnosis of secondary syphilis was made.

### References

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- 2 Brittingham, John W. *Ann. Otol., Rhin. & Laryng.* 44: 990 (1935).

### Discussion

Dr. Leon H. Griggs, *Syracuse, New York*—I feel that Dr. Thomas has read an excellent paper on the subject "Chronic Tonsillitis in Secondary Syphilis." I believe that it is true, as Doctor Thomas has stated, that most, if not all, syphilologists realize that secondary syphilis may cause a chronic tonsillitis. Yet it is evident that many errors of diagnosis are made by the profession at large.

During the past several years, the diagnosis of diphtheria has been stressed with excellent results. Almost the first thought in a case of tonsillitis is the question of diphtheria. Next comes the thought of a Vincent's infection. It is impossible to state when the thought of syphilis appears.

During my personal experience of ten years in general practice, I saw 1 case of diphtheria. Yet in nearly every case of tonsillitis I took a culture. I do not recall that I took many Wassermanns.

Dr Thomas' statement, "there is nothing characteristic about the sore throats of secondary syphilis," is an excellent one. I believe that in a case of chronic tonsillitis one should keep in mind the three possible diagnoses of diphtheria, Vincent's angina, and syphilis. I further believe that the differential diagnosis should be aided by laboratory tests. In other words, a culture, a smear, and a Wassermann should be taken at the same visit.

Again, Dr Thomas has stressed the need for more complete physical examination along with taking a routine Wassermann in suspected throat cases.

In closing I will make the plea, often heard, that we raise our index of suspicion of syphilis. This will be needed more in the future when it is probable that a case of early syphilis will be considered a rare disease.

## WORKMEN'S COMPENSATION

We have been informed by the Director of Workmen's Compensation of the Department of Labor that many physicians throughout the state are not yet familiar with the amendments to the Workmen's Compensation Law which became effective on July 1, 1940. These were published in the *NEW YORK STATE JOURNAL OF MEDICINE*, June 1, 1940. The attention of physicians practicing under the Workmen's Compensation Law is again directed to these amendments, and they are urged to comply with them.

It should be noted that the C-14 report must now be forwarded to the employer or insurance carrier and the Department of Labor, within fifteen days instead of twenty days as heretofore. This report should be notarized, but physicians are urged not to delay it if a notary is not available. The C-104 form is reportable within forty-eight hours.

The new progress report (C-14) should be sent to the employer or insurance carrier and the Department of Labor in all protracted cases every three weeks. The Law states that the C-4 report should be submitted "when requested" by the employer or insurance carrier, but it is advisable to submit such reports, even though not re-

quested, at regular intervals, in order to familiarize the employer or insurance carrier with the progress of the patient if the medical care continues beyond the first four weeks or so.

Another amendment, effective July 1, 1940, gives to the Industrial Board the right to assess the cost of medical care against a noninsured employer. Physicians treating claimants whose employers fail to carry insurance should submit bills for medical service directly to the Department of Labor, care of the Industrial Board, 80 Centre Street, New York City, and send a copy of the correspondence and bill to this office.

Workmen's compensation committees or boards throughout the state are urged to bring the above changes to the attention of physicians at the regular meetings of the county societies and by publication in local bulletins.

The various forms (C-104, C-4, C-14, and C-27) are available on application to the local county society office. Forms are obtainable by the societies upon application to the Department of Labor, Albany and New York offices. Physicians should not apply directly to the Department of Labor for blank forms.—*David J. Kalish, M.D., Director*

## WAR HALTING MEDICAL JOURNALS

How medical science has been affected by the hampering of the interchange of reports of research work, new discoveries, and other advances of the science among the nations is shown by the steady falling off in the number of medical publications being received from abroad by the quarterly cumulative *Index Medicus* and the library of the American Medical Association. Austrian weekly publications used to come every week to ten days. None has been received since early in June. No Polish or Czechoslovakian publications have arrived for many months. Sixteen such publications were dropped from the *Index* at the beginning of 1940.

The notice of the suspension of eleven French medical publications came over two months ago. The last weekly reports from Italy were received

at the end of June. British publications still come with slight delay.

From January to March, 1940, a total of 8,160 publications of foreign origin was indexed. The number dropped to 7,590 from April to June, from July to August 19 to only 3,415, a loss of more than 50 per cent.

A historian of the Thirty Years' War has written that "all culture and science in Germany died under its deadly breath." History has begun to repeat itself in the Old World. The gangsters at the helm of Nazi Germany, comments an upstate paper, the *Jamestown Post*, combating everything international, are crippling medical science by preventing the interchange of the advances made in it by the scientists of the world.

## ALUMNI DAY, NEW YORK UNIVERSITY COLLEGE OF MEDICINE

The date of the annual Alumni Day at New York University College of Medicine has been changed from the usual Washington's Birthday to March 21 and 22, 1941, when the Alumni Association is celebrating the one-hundredth anniversary of the founding of the medical college.

The program will begin with a dinner for all the alumni and their wives at Hotel Roosevelt on

Friday, March 21. On Saturday, March 22 there will be a scientific session at the medical school during the morning and afternoon. The program for this will be published later. There will be a luncheon that day in the lounge at the medical school. Dr Nathan B. Van Ethen of the class of 1890, president of the American Medical Association, will be the speaker.

# THE ROENTGEN TREATMENT OF PATIENTS WITH ADVANCED MALIGNANCY

JOE VINCENT MEIGS, M D , Boston

JUST over one year ago a patient with a tumor mass in the right flank, following removal of a leiomyosarcoma of the uterus two years previously, reported for follow-up and advice as to treatment. Inasmuch as the tumor seemed somewhat movable, an attempt was made to remove it surgically. Consequently, in March, 1939, at the Massachusetts General Hospital a trial was made to remove this mass. At the exploration it was found that the area was compact and slightly movable but that it could not be taken out without probable damage to the right kidney, the large vessels, and the pancreas. The tumor recurrence was much more extensive than at first thought, and no serious attempt was made to excise it. It was considered a satisfactory case for x-ray treatment as the tumor could be well localized and as other cases with leiomyosarcoma had been observed to melt away with this form of treatment. Consequently, treatment was started in February, 1939. A total of 7,700 r was given, and this was considered by Dr. George Holmes as sufficient. For a short time it looked as though some relief was going to be obtained, but in August, 1939, the patient being bedridden most of the time, the pain became so severe that further treatment was advised. This time the patient was sent to the Palmer Memorial Hospital for treatment with their 400,000-volt machine. Here a satisfactory series was given by Dr. Joseph Marks, but finally the discomfort of the patient both from the growing tumor and the treatment became so great that she was sent home. As this tumor was well localized and as it was her only chance for life, the total treatment was large in amount and the result both of the size of the tumor and discomfort from it was poor. In addition, nausea and vomiting and discomfort from the treatment were great. After a short time at home the patient could, with difficulty, go up and down stairs, but she died in October, 1939. It was obvious to all that the treatments had not done the slightest amount of good and that the patient might have had more good days

if no treatment had been given at all. Her right ureter was blocked by the tumor, and a pyelitis recurred occasionally due to the blockage. During the treatment this was not relieved at all.

In May, 1939, a doctor's mother with a hard, fixed tumor mass in the pelvis was seen in consultation. There were no localizing areas, and an accurate diagnosis as to the source of the tumor could not be made. An attempt was made to get a biopsy by making an opening through the vagina on either side of the cervix, nothing but chronic inflammatory tissue was obtained. It felt as though the tumor might be intestinal with extension from the bowel to the bladder. At cystoscopy a roughened area could be seen on the right which was felt to be growing into the bladder from something extrinsic to it. A biopsy was taken that showed undifferentiated carcinoma growing very rapidly, and no guess could be given by Dr. Shields Warren as to the primary source. Because of the hardness and fixity of the pelvis and because of the positive biopsy in the bladder, exploration and operation were decided against and x-ray treatment was advised. The patient was given 7,200 r by the 400,000-volt machine at the Palmer Memorial Hospital. During the time of treatment the patient suffered from nausea, pain, and in every way was exceedingly miserable. After three months of hospitalization it was felt that the tumor had shrunk some and that the patient could be moved to her home. For months the pain was just as severe as ever, and only slight progress in shrinking of the tumor mass was observed. For the past six months the patient has suffered with intermittent intestinal obstruction, progressive loss of weight, and marked edema. She can get out of bed for a few minutes at a time. It has been necessary to give her morphine or one of its derivatives continuously. Nausea and vomiting are constant. The bladder difficulty, pain, frequency, and incontinence have cleared up remarkably. This patient, though now approaching ten months postirradiation and still living, is miserable. It has been necessary to have constant nursing care, and her whole household is now a hospital ward and everything centers upon the invalid. The treat-

Read by invitation at the Annual Meeting of the Medical Society of the State of New York, New York City, May 8, 1940.

From the Massachusetts General Hospital, Palmer Memorial Hospital, and Pondville Hospital.

ment seems to have slowed up the advance of the tumor and prolonged life, but the life as prolonged is not a happy one and the patient's fortitude is a great tribute to her. It is the opinion of us all that it might have been better to have done nothing and to have kept the patient happily narcotized than to have offered her any hope that the treatment would help and to have encouraged her to believe that it might even make her better for a short time. It is probably true that she has lived longer than she otherwise would have, and yet it has been a living death, with the family constantly conscious of her suffering and her steady downhill progress.

Because of intimate contact with these 2 patients, who in hopeless conditions were given x-ray treatment in a hope of helping pain and suffering and perhaps prolonging life, and because of the unsatisfactory results obtained, an investigation has been carried out in an attempt to evaluate the effectiveness and value of x-ray treatment in hopeless conditions.

### Material

To make the study worthwhile it was considered necessary to obtain from the various hospitals and x-ray departments at least 100 patients who had inoperable cancer and in whom a biopsy was obtained and the abdomen closed or a group of patients who were operated upon at least a year before and who had a recurrence in the abdomen or retroperitoneal region after the original operation had completely removed the growth, at least as far as the surgeon could tell. Patients who were operated upon and had most of the tumor removed, and in whom the x-ray treatment had been started, were not included in this series. These 100 cases were either primary inoperable ones or recurrences after a year following what was considered a satisfactory removal of the entire growth. (Another series will be subsequently studied of the cases who have a nearly complete removal of cancer and are then given roentgen treatment.) To obtain such a series seemed easy but, when an attempt was made to find the cases, great difficulty was encountered. Frequently, the roentgenologic departments of the various hospitals have inadequate filing systems of treated cases. There are not many. It is interesting that when individual surgeons were asked about the problem each one had a special patient or two who had fared well with treatment but they forgot the large number that failed. It was therefore

considered necessary to find hospital cases in sequence, and so the records of the x-ray departments of the Massachusetts General Hospital, the Baker Memorial Hospital (private wing of the Massachusetts General Hospital), the Palmer Memorial Hospital, and the Pondville Hospital were searched, 100 cases were obtained. Two cases were taken from the Huntington Memorial Hospital. There was no selection of good or bad cases, but all were taken in chronologic order so that a satisfactory view could be obtained.

In this series lymphomas, disgerminomas, and other radiation sensitive tumors were excluded purposely, for they are in a class by themselves and should be discussed separately. One thing that has been learned from this study is the necessity for the x-ray departments to keep more adequate treatment files. A great deal of time was consumed in finding the cases before any study could be undertaken. A follow-up has been instituted that is 94 per cent complete, so that the end result is accurately known. Very little is recorded concerning the amount of roentgen sickness and discomfort during treatment, and only occasionally is there a note that blistering occurred. Frequently, the roentgenologic department notes apparent relief of pain during treatment that does not coincide with the opinion of the surgical notes. Often a short sentence will be found stating that the patient is much better only to find that he or she has died within a week or two of treatment.

This series suggests that there are good cases for treatment and poor cases for treatment. A good case is one that has localization of growth so that the surgeon can show the roentgenologist exactly where to direct the beam when the x-ray can be applied all around about the malignant process. A poor case is one with diffuse intra-abdominal extension of growth so that x-ray treatment can only be given through multiple fields to cover the extent of the lesion. Cases with metastases outside of the trunk of the body are considered "poor cases," and yet some of these have been given full abdominal doses without any treatment of the metastatic lesions. An attempt has been made in this study to evaluate the results of treatment of "good" cases and "poor" cases. These two groups certainly are not absolutely comparable, for one form of treatment can be given to one group while another form must be used in the other group. To fulfill the requirements it was necessary to include many different tumors and lesions,

and there are not sufficient numbers in each group to make the statistics anything but suggestive

In different years different amounts of radiation have been considered adequate, and in a good percentage of these cases our x-ray department does not now consider the treatment sufficient. At the time it was given, however, it was thought to be enough, but subsequent years have disproved it. Such patients should be disregarded and more found to make up the 100. However, it should be pointed out that these patients were sent to the x-ray department and were given treatment, and, if the total treatment of that day is not considered adequate now, it was then, just as today's treatment may not be considered sufficient ten years from now. Therefore, it will always be impossible to write such a paper as this and please everyone. The x-ray department accepted others and could not finish the treatment. That again should not exclude the case, for the case was considered worth treating and the treatment failed. Another paper, a companion-piece to this one, should be written and should include only those patients who had what is now considered sufficient treatment, who took all the treatment, and who have the same type of tumor. This type of paper will be extremely difficult to do, for such a group will not be easy to find. My presentation is of 100 patients accepted by the x-ray department and of treatment started and the results of such treatment.

### Reason for Giving Treatment

Certain patients with inoperable malignancy are given treatment because the surgeon feels he can do nothing surgically and yet something must be done. These patients are sent to the x-ray department with the notation of "inoperable cancer" of the stomach, pancreas, ovary, etc., and a request for treatment. The surgeon rarely, and this is important, goes down to the x-ray department and demonstrates exactly where in the patient's abdomen the tumor lies. A cancer of the rectum may be high or low, in the liver, kidney, or the lymph nodes, or a huge malignant mass may be present, but the surgeon simply requests x-ray treatment and the roentgenologist gives it. The department of roentgenology should not accept such a patient for treatment until the surgeon has gone to the department and explained to the roentgenologist who is to treat the patient, where the tumor is, how extensive, and where

treatment should be given. Sometimes treatment is advocated for the "morale" of the patient. It is difficult to open and close the abdomen and tell the family and patient there is nothing to do about it. So because something should be done to boost the "morale" of all concerned, the patient must be told that x-ray occasionally performs miracles and therefore, it should be tried. So the x-ray department gives treatment that as a general rule makes the patient feel worse (nauseated and sick) and in the end does absolutely no good. In another group, treatment is given to relieve pain, and in our series 13 out of 43, or 32.5 per cent, obtained a moderate amount to a good deal of relief. If it will do this, it is worthwhile, yet its relief is at the cost of considerable discomfort from the treatment. This is much more legitimate than using the treatment for the sake of "morale." Treatment for pain in extensive cases should be given lightly and slowly, and, if a result is obtained in a few treatments, perhaps that should be considered enough. The treatment is sometimes given to stop fluid from reaccumulating. Roentgen treatment may prevent the rapid recurrence of fluid the first time, but the second and third treatments may be of no avail. Careful judgment should be exercised in all groups by the roentgenologist, and he should be the one to decide whether treatment should be given or not. He should be the judge as to whether or not to use his "knife" and not the surgeon.

### Type of Treatment

In most instances the treatment was given by means of a 200,000-volt machine with nearly similar distances, screening, etc., in all the hospitals. In a number of instances the 400,000-volt machine at the Palmer Memorial Hospital was used and in a few the 1,000,000-volt apparatus at the Huntington Memorial Hospital. Fields varied from 8 by 10 to 20 by 20 and amounts of radiation from 200 to 12,000 r. The 200,000-volt treatment is given at 50-cm distance, 5 to 20 milliamperes, screening  $\frac{1}{2}$  mm of copper, each field receives 200 to 400 r per day. The factors of the 400,000-volt treatment are as follows: 50-cm distance, 5 milliamperes, screening—0.9 mm of tin,  $\frac{1}{4}$  mm of copper, 1 mm of aluminum, intrinsic filter is equivalent to about 7 mm of copper. Each portal is usually 15 cm square, and 300 r are given daily. The 1,000,000-volt treatment is given at 70-cm distance, 12 milliamperes, 5 mm of lead, with daily exposures of about 400 r. There are variations

of treatment in all hospitals and in different cases, but the above factors are the usual. In this series most treatments were given by means of the 200,000-volt apparatus. It is quite possible that future results will be better now that roentgenologists are becoming more accustomed to higher voltages, but it is doubtful if hopeless inoperable cases will ever be cured, no matter what the voltage and the skill of the operator. It is our duty and the duty of the roentgenologist to choose cases for treatment when chances for relief at least are present. Treatments just to do something for the patient should be condemned.

### Review of 100 Cases

In the group studied there were 83 primary cases and 17 patients with recurrent disease. As stated above, primary cases are those in whom nothing but a biopsy could be done at the original operation, and the recurrent cases are those in whom tumor has come back a year after complete removal of the tumor. Twenty-seven were men and 73 were women. The ages were from the twenties to the eighties, with the large majority from 40 to 70, the usual cancer decades. The results are slightly better than expected and are such that instead of condemning x-ray treatment for inoperable disease perhaps better selection of cases and more intelligent treatment might lead to even better palliative results. Eleven of the 100 patients are now living for from six months to nine years. Of these 11 cases, 4 are in very poor health and are obviously going to die soon, leaving 7 cases that can actually be considered as "satisfactory." There are 4 who have survived over three years, 1 for seven years, and 1 for nine years. The 7 satisfactory cases will be presented in brief case reports below. All male patients are dead, the only survivors being women.

Nothing definite could be gleaned from the size of the tumor of 30 patients with large tumors: 6 survived, of 4 patients with localized recurrence 1 is still living, three are living of 40 patients with widespread abdominal extension, and of 38 with metastases from a local growth to other areas 3 survived. There seems to be nothing pertinent in the size or extent of the lesion.

The most common lesion treated was carcinoma of the ovary, 39 were treated and 2 or 5 per cent survived, this being worse than the 7 per cent survival of the entire group. This lesion is one of the most common types of malignancy to be treated by x-ray if the lesion is inoperable. Each of us will remem-

ber a "miracle" case where a tumor was removed or partially removed or where metastases were present and after x-ray treatment the patient has lived for a number of years. This is not necessarily the result of roentgen treatment of the cancer but may be due to changes in the ovary, for without doubt the removal of an ovarian tumor is sometimes followed by a regression of metastases even without any x-ray treatment. This may be due to some hormonal influence. If such a patient is treated with x-ray with a good result, great credit is given to the roentgen ray's effect on cancer. It is impossible to say just what these tumors are, but an endometrial type of growth might regress if an ovarian tumor capable of secreting estrin were removed. Patients with malignant papillary cystadenomas live long, frequently without any x-ray treatment. For this reason it is very difficult to evaluate the result in the 2 survivors in the ovarian group, for they might have lived just as long without any treatment.

Of 28 patients with tumors of the large intestine, 19 being of the rectum, none survived. This type of lesion has always been known to respond poorly to radiation, and this group demonstrates that inoperable tumors of the lower bowel are certainly poor subjects for radiation. There were 7 inoperable cases of cervical cancer, both primary tumors and recurrent abdominal masses, and of the group 1 primary case survived. This tumor was in the cervical stump.

One of the most interesting findings is that of 5 cases of cancer of the pancreas, 2 patients survived. Of 1 there is no question about the diagnosis, and the patient is living seven years after treatment. The other is called cancer by the pathologist every time the slide is reviewed, but doubt has been raised by the x-ray department as to the malignancy of the lesion. Inasmuch as this study relies upon the pathologic findings for the diagnosis, this case must be accepted as cancer of the pancreas. These 2 cases will be presented below in more detail.

Four patients with inoperable cancer of the stomach were treated and none survived, as would be expected. There are a scattering of tumors of other organs treated such as cancer of the bladder with the patient dying, 5 patients with cancers of the uterine body with 1 survivor, 1 patient with cancer of the omentum and mesentery (metastatic from the breast) with the patient surviving. Single cases of cancer of the vagina, tube,

prostate, and kidney have no survivors. The good results, therefore, are limited to the ovary, the cervix, the pancreas, the endometrium, and the breast. No general statement can be made, but, as expected, the ovary and other female genital cancers account for most of the survivors, with the pancreas, strangely enough, having the highest percentage of cures.

The pathology of the types of tumors is of no real interest as no particular tumor responded better than any other. Most of the tumors were adenocarcinomas, and 5 of the survivors were in this group. One patient had three different tumors of three different organs, and 2 patients had two different tumors of two different organs.

Of 43 patients who had pain recorded before treatment, 10 (over 23 per cent) obtained relief. An additional 3 obtained some relief. Six patients obtained no relief at all, and in 24 cases it was not mentioned whether relief was obtained or not. In 4 patients treatment was advised for pain alone, not with the idea of checking the tumor but simply to relieve pain. Only 1 of these obtained any result.

In 19 cases fluid was present in the abdomen, and in 9 cases the treatment either prevented or slowed up the reaccumulation of it. This is of considerable advantage and must be remembered when dealing with patients who accumulate fluid.

In 3 patients the treatment was advised to help the patient's "morale," without result either in benefited "morale" or relief from tumor. This reason for treatment is not a good one.

In 3 patients the x-ray department advised against treatment, but it was urged by the surgeon and given. In 10 cases further treatment was advised against, and in 1 the surgeon requested treatment against advice of the roentgenologist. It would seem that the final decision of whether to treat or not to treat should be determined by the roentgenologist and not by the surgeon.

Radiation reaction of which nausea, vomiting, and general discomfort were the most prominent symptoms was present in 40 of the 100 patients. In addition a smaller group had anorexia, diarrhea, tenesmus, skin reaction, weakness, and some had a temperature. Many had multiple complaints, but in those patients with extensive disease practically all complained of radiation sickness so much that it was recorded in the records.

Thirty-five patients had more than one

series of treatment. Six had three series, 3 had four series, and 1 patient finally had nine series. Two of the patients living and doing well had one series each (cervix and ovary), while the others had two each and the breast patient had multiple treatments.

The primary cases who died lived an average of five and nine-tenths months and the recurrent cases nine and six-tenths months, the total number who died lived an average of six and one-half months after the treatment. These results may be considered a success, but who will say that most would not have survived that long even without any treatment? Is it worthwhile to be sick during treatment and survive only an additional six months, most of it in considerable discomfort?

In considering the length of survival of the dead, it is interesting to notice that 6 patients survived less than a week after treatment, 7 survived two weeks, and 9 survived one month. Therefore, 22 per cent of the patients lived only one month or less after the treatment was finished. Surely these patients should not have been subjected to x-ray treatment. Eleven survived two months, making 33 per cent who died within two months. Fifty-five per cent did not live over six months, and 69 per cent died in less than a year. Twelve cases lived from one to four years, and 11 patients are still living, 4 being practically moribund. These figures indicate that more judgment should be used before this treatment is offered to patients. Only seven per cent did well and, except for 2 cases of cancer of the pancreas, are not likely to live beyond five years after treatment.

Thirteen autopsies were done on patients, and in only 1 patient was x-ray reaction noted in the tumor tissue. It is probable that this is an oversight, but it should be mentioned in protocols, for, if no radiation reaction is noted, certainly there can be no value to the treatment.

### Adequate X-Ray Treatment

To decide whether or not a modern treatment would improve the results of this series, a group has been selected of those patients who have had what the x-ray departments consider sufficient treatment to affect the type of tumor present. Four thousand roentgens has been set as the so-called minimum of sufficient treatment. Of the living cases with a good result, 1 pancreas case is omitted, for this patient received only 1,600 r and this is not sufficient to have roentgen treatment be responsible for keeping the patient alive.

nine years. One patient living and doing well had 3,600 r given by the 400,000-volt machine. This treatment is considered adequate. Of the 46 patients receiving what can be accepted as a satisfactory treatment, 6, or 13 per cent, responded well. On accepting this as a satisfactory group of cases, it must be admitted that 13 per cent of respectable results in inoperable malignancy by means of x-ray treatment is good. In other words, if sufficient treatment is given, a fair palliative result may be obtained.

The length of life of the sufficiently treated patients is only slightly better than those treated inadequately. Of the well-treated dead cases 32 per cent were dead at two months as contrasted with 46 per cent of the less well treated. Sixty-four per cent at six months were dead, while 70 per cent of the less well treated were dead. At one year 77 per cent of the well treated and 90 per cent of the poorly treated were dead. There really is very little to choose between these two sets of figures, and therefore this method of approach does not prove that "sufficient treatment" will make very much difference in the length of life. It is true, however, that the living cases, including those dying, were—except for a pancreas case—those that have had sufficient treatment. Thus, well-planned and satisfactory amounts of treatment are imperative.

After the history, examination, and amount of treatment of each case were read, the patients were divided into groups of good cases for treatment, fair cases, poor cases, and very poor cases. There were only 6 cases that were considered as likely to produce any result, and, of these 6, 1 responded well to treatment, (a patient with a recurrent mass of endometrial cancer). One had fair palliation, 1 had slight palliation, and 1 had excellent palliation. Among the 3 fair cases, 1 had slight palliation. In the group of 77 poor cases 1 had good palliation, 17, some palliation, 3, a fair result, and the rest, poor. In the very poor cases 1, a patient with cancer metastatic from the breast, is doing very well. In other words, it is not possible to pick and choose the cases likely to do well, but more can be done to select the ones that will do poorly.

### Survivors

Seven patients are considered to have responded well enough to support the advocates of roentgen treatment. Of these 7 women, 2 had cancer of the pancreas, both of these

patients have survived over seven years, 1 on inadequate x-ray treatment. It is therefore doubtful whether or not this case actually belongs in this series and whether the same result might not have been obtained without any treatment. This case has been reviewed from the pathologic point of view, and the pathologist reaffirms his diagnosis. If this case were to be excluded because of the excellent result with inadequate treatment, only 6 patients would be living of the 100 that were investigated. That would leave 2 patients with cancer of the ovaries who unquestionably have done well but are far from cured, a breast patient with disease in her vertebra but who responds beautifully to x-ray treatment, a patient with a grade III cancer of the cervix, a patient with cancer of the pancreas, and a patient with a recurrent mass of endometrial cancer that is still present but is smaller and gives no symptoms. In the entire series the only apparently "cured" cases are the 2 patients with lesions of the pancreas, and the diagnosis of cancer of the pancreas in 1 of them is in some doubt. The record is not a brilliant one but better than nothing.

### Reports of Successful Cases

*Case 1*—A. A., a married woman, aged 60, was operated upon in June, 1939, and inoperable pelvic masses were found with a peritoneum studded everywhere with disease. A biopsy showed carcinoma, type undetermined. X-ray treatment was given at the Palmer Memorial Hospital with the 400,000-volt machine. She was given a series through four portals, left lower, right lower, left upper, and right upper parts of the abdomen. A total of 3,600 r was given. She suffered a slight anorexia. She failed to report and finish her series, and she was not strongly urged to do so. Her doctor writes in March, 1940, that she is still "going on her own power." She feels better than she has for a long time. Her abdominal mass is much smaller.

*Case 2*—J. B. L., a single woman, aged 33, was operated upon in December, 1936, and a malignant, papillary, solid, right ovary densely adherent in the pelvis was found. The pathologic report was malignant papillary cyst adenoma. In January, 1937, she was given 4,800 r through four portals, front and back of the lower part of the abdomen, 1,600 each to anterior and posterior part of the abdomen and 800 each to the right and left lateral areas. In June, 1937, she was in excellent condition. In April, 1938, she had gained 7 pounds. In December, 1939, a large mass was found in the vaults, slightly movable. Some fluid was present. She was examined with a peritoneoscope and later operated upon, and a supravaginal hysterectomy and bilateral sal-

pingo-oophorectomy were performed. The ovaries and peritoneum were completely involved. In January, 1940, she was given about 8,600 r over her pelvis, both front and back, through four portals. A report in April, 1940, says she has gained 7 pounds. She has a good deal of abdominal pain which is not cramp like. She looks well and has a good appetite. No definite recurrence can be felt in the pelvis.

*Case 3*—M R, a married woman, aged 70, in January, 1932, had an exploration carried out on the common bile duct and pancreas. A small, shrunken gallbladder was found. The head of the pancreas was hard. A biopsy was done, showing adenocarcinoma. A T tube was placed in the common duct. Because the gallbladder was so small, a cholecystogastrostomy could not be done. In February, 1932, she was given 3,200 r through two large fields, front and back, over the pancreas. In June, 1933, this same treatment was repeated. She was not seen from 1933 to 1936 when she came back with the T tube still present. Gentle traction over a period of twenty-four hours eliminated the tube. A month later she was still flowing a moderate amount of bile. In June, 1937, her wound was absolutely healed and she looked extremely well. In June, 1939, she was completely well. She had an excellent appetite, normal bowel movements, and normal color. No tumor mass could be made out. The slides were reviewed by Dr. Tracy Mallory, and there is no question about the diagnosis.

*Case 4*—J P was a married woman, aged 26. In January, 1929, an exploratory laparotomy was carried out for an abdominal tumor. There was a large mass the size of a melon posterior to the stomach and fixed to the posterior abdominal wall. It had an elastic feel with hard nodules scattered throughout. The common duct was greatly distended, with thin wall. The peritoneal cavity was opened, and the tumor was identified as the pancreas. A small section was removed for diagnosis. A needle was thrust into the center of the growth but no fluid could be obtained. It was beyond the possibility of surgical removal and showed carcinoma with mitotic figures fairly numerous, and undifferentiated epithelial cells. It suggested a primary growth of the pancreas. In January, 1929, she was given nine treatments with the low-voltage machine, an erythema being given front and back, centered over the pancreas, through a 15 by 15 field. In April, 1929, this treatment was repeated. In June, 1930, there was no appreciable change. The tumor mass extended down almost to the umbilicus. In March, 1932, the skin over the treated area was normal. The patient had no complaints. In 1931 she was delivered of a normal child, the low-voltage treatment having no effect upon the baby. She still had a rounded mass in the abdomen. In September, 1935, she looked very well. Apparently there was no pain referable to the tumor mass. There was no

change in size. In October, 1937, she had been well until recently when she had lost 20 pounds. She was referred to the hospital for study and after study a diagnosis of diabetes was made to account for her symptoms. In September, 1938, we learned that the patient's condition was not very good.

*Case 5*—G S is a single woman, aged 65. This patient was operated upon ten years previously when a carcinoma of the endometrium was removed. Ten months before she was seen at the Baker Memorial Hospital where a large, hard mass, thought to be a recurrent carcinoma, was found in the right side of the abdomen. She received x-ray treatment there, a total of 4,000 r to the anterior and posterior sacroiliac, to the posterior right pelvis, and to the anterior right pelvis in fourteen treatments in April, 1937. A large mass could still be felt in the right side of the abdomen, both by rectum and by abdomen. In February, 1938, she was given twenty-one treatments through three portals, a total of 6,000 r, with the 400,000-volt machine at the Palmer Memorial Hospital. In April, 1940, the patient's condition was excellent. She looked well and felt well. She had no discomfort of any kind. The mass is still present but much reduced in size. There are marked telangiectases over the area of the treated tumor. This is a remarkable case so far.

*Case 6*—M M is a married woman, aged 64. The patient had a hysterectomy for fibroids in 1925, the cervix being left in place. She bled in March, 1938. She was given x-ray treatment in May, 1938, twelve treatments to the anterior and posterior pelvis, a total of 4,500 r through a 15 by 15 field and 10 by 10 field. She tolerated the treatments extremely well. The pathologic report showed epidermoid carcinoma of the cervix, grade III. In March, 1940, a letter from her physician stated the patient was free of disease for twenty-two months—no evidence of cancer anywhere.

*Case 7*—E P, a woman, aged 52, had a right radical mastectomy in July, 1932. A diagnosis of scirrhous carcinoma, grade III, was made, with no metastases to lymph nodes. In October, 1933, she was given 2,000 r to the nodes in the right clavicular region and to breast scar. In January, 1935, she had a left radical mastectomy, the diagnosis being carcinoma. In May, 1936, she was given 2,000 r to the left scar. In December, 1936, she had entered the hospital with a large mass involving the duodenum, the mesentery, omentum, etc., and with gastric obstruction. It was necessary to do a gastroenterostomy to relieve the obstruction. In February, 1937, she was given nineteen treatments through a 15 by 15 field, 2,000 r to the anterior and 1,800 r to the posterior epigastrium. She had a moderate erythema both front and back. She has received treatment off and on to the cervical spine, which is involved in metastases. In January, 1938, following treatment

she had much relief, and in August, 1938, the tumor mass was gone, it could not be felt. In April, 1939, she was again in excellent condition. No masses could be felt. In March, 1940, she suddenly had an attack of pain in the sacral region, probably metastatic area. In April, 1940, her physician stated that she had no gastric symptoms and she was in excellent condition except for the fact that her malignant disease is still present in the vertebrae.

## Discussion and Conclusions

From the point of view of organs involved in disease it is obvious that the ovary, the uterus, and the pancreas are the most satisfactory. Cancers of the stomach and intestinal tract show, in this series at least, no permanent relief from x-ray treatment. The size and extent of the tumor plays a small role in the possibility of relief. Men did not do well, as none survived. Pain may be helped in a fair proportion of cases, and abdominal fluid may be slowed up or checked in some cases. Radiation reaction severe enough to mention occurred in 40 per cent and should be considered in advising treatment to the patients with extensive involvement.

From this study it is seen that 19 per cent lived a year or longer, therefore receiving satisfactory palliation. This is a sufficiently good percentage to make us consider this form of treatment in all patients with inoperable cancer. In the future, patients should be selected who have definite reasons for treatment, such as an inoperable growth because of position of tumor, a not too extensive growth, and for the relief of pain, fluid, etc. So-called sufficient x-ray treatment did not prolong life in any appreciable amount over patients with less and, in some instances, inadequate treatment. Nevertheless, of the real survivors of this group of 100 cases, all but 1 had had sufficient treatment. This is slightly encouraging if the proper case for treatment can be selected and large doses given. X-ray treatment of the desperately ill patients and patients with extensive metastatic disease is to be deplored. It is much better to avoid the use of radiation in such patients. Life is not worthwhile if even more suffering is to be the lot of the patient. The surgeon should consider the size of the growth and its extent first, consult personally with the roentgenologist, talk the situation over, decide what can be expected from treatment, and then certain patients should be turned down and sent back to the ward for the use of comforting drugs. All patients with inoperable cancer or recurrent cancer must not be

treated, for often more harm is done than good. It is ill advised to say "Inoperable cancer. Send patient to x-ray!"

## Discussion

Dr Donald S. Childs, *Syracuse*—I was indeed happy to have read Dr Meigs's paper. I thought it was an excellent paper to bring to this particular group because he seems to be carrying the torch for the roentgenologist.

It is true that what he says in certain spots backs us around a little bit, but his basic discussion is exactly the thing that the roentgenologist has been talking of for years but never getting any place.

The care of cancer, I believe, is not a surgical problem, it is not a medical problem, and it is not a radiologic problem, but it is a combined problem of all existing facilities.

But the way it is applied it becomes very definitely a surgical problem. Then, when everything goes sour it is dumped over into the hands of the radiologist. At least we hear a great deal about the early diagnosis of cancer. Well, I can count on the fingers of my one hand the early cases of cancer that I have seen.

I was interested in Dr Meigs's statement on his primary and recurrent cases. His primary cases he described as those where the abdomen was opened, a biopsy taken, nothing done, and the abdomen closed. In other words, my interpretation of that is that he had 100 per cent potential mortality. And yet he had, I think it was, 7 per cent recovery with radiation.

Now, I do not believe that there is any so-called cancer specialist in the country who is not tickled to death if he can improve his results 5 per cent.

There are several things that I think we ought to go into, and as a roentgenologist I want to bring them out. We hear a lot about the difference between 200-, 400-, and 1,000-kilovolt x-rays. As far as I have been able to find out, there is nobody today who has ever been able to say that for a given amount of radiation there is any increased biologic effect on 200-, 400-, or 1,000-kilovolt x-rays. There is no increased biologic effect.

There is this effect—less back scatter and less skin reaction, and that is about the limit. That is as far as we know today. Tomorrow may be a different thing.

Now, as to that, the important factor as far as radiation is concerned is the rate at which the radiation is given. The amount of radiation, the distance, the filters, the size of portals, and the time—those are the important factors, particularly the rate or the r per minute in which the radiation is given. I must admit that there is some discussion, particularly in the City of New York, on this particular matter. But I feel that it is generally conceded through the country that the r per minute is rather important.

This is a particularly good group to talk to.

about skin reactions If you are going to get results you are going to get skin reactions, and skin reactions mean redness, itching, burning, and blistering

The treatment of those skin reactions never should be in the hands of the surgeon I saw one the other day, a very ambitious surgeon covered a skin reaction over the lower part of the abdomen with adhesive plaster putting one little light layer of gauze underneath it You can imagine what is happening and what is going to happen

We get the greatest roentgen sickness on the patients who are the most apprehensive I have an individual getting a series of treatments who lives in a town about fifty miles away He gets on the train and he vomits all the way to Syracuse He comes in the office and is treated and behaves himself perfectly, and then he vomits all the way home That, according to him and his physician, is roentgen sickness Well, maybe so

I think that the diarrhea and the tenesmus that we get if we are a little ambitious in our dosage at one time should be cut down by curtailing the dosage

Dr Meigs states that Dr Shatsky said 4,000 r was adequate treatment Well, I do not know what he means, and I do not think he does It is like this 4,000 r means that the patient got 4,000 r, but it does not say a thing about how he got it or where he got it, how the portals were and what the distance was, and says nothing about the depth dose It is really the dose that gets to the tumor-bearing area with which we are concerned

As to 4,000 r—take, for example, saline and you give 4,000 cc to a patient. What does that mean? Absolutely nothing You might have washed his face You might have stuck it down his esophagus or given it rectally or intravenously Yet, you gave 4,000 cc of saline The same thing is true when you say that they had 4,000 r It means absolutely nothing until you go along with the rest of the factors

Now, as to this matter of records I think the question of records is very important and everyone knows that they are inadequate in most hospitals The reason for it is that the roentgenologist, by his natural makeup and because of his occupation, is naturally shy, reticent, and easily dominated. The patient comes primarily to the roentgenologist because somebody, somewhere, decided that roentgenology was to be used. The roentgenologist is never consulted as to the advantages of it, either in the diagnostic field or the therapeutic field. Patients are simply dumped in your lap

If you are going to have competent records, you must have cooperation between the clinical departments The personnel of these departments change every three or four months, but the roentgenologists are still around You must have that cooperation, and you must have your consultation about the case (whether it is going to be treated or not) before the patient or the patient's family is told

Again my experience is that the patient is in bad condition and the patient or the patient's nearest relative has been told that the only thing we can do is to give them the roentgen ray

Now, being shy and reticent and all that, what can we do? We cannot do one single thing. We have to treat them

As to the treatment for the morale of the patient, I agree with Dr Meigs It was good to have this opportunity of getting things off my chest in front of a surgical section, and I appreciate the torch bearing that Dr Meigs gave us.

Dr Louis C Kress, Buffalo, New York—Dr Meigs today has discussed a troublesome problem and in a measure has given us an answer that does not satisfy us all. His paper deals with a group of patients who were unfortunate in having advanced cancer The type of malignancy encountered in these patients was undoubtedly the differentiated type Pathology, grading, etc., were not considered in this paper, but most of the tumors were adenocarcinoma and in organs in which this type of pathology is most frequently encountered These types do not respond as a rule to radiation, but in spite of this fact he did salvage 2 per cent Without radiation it is far to assume that perhaps 1 per cent of these would have succumbed to the disease The other 5 per cent did have their lives prolonged, which perhaps was or was not a benefit to the patient depending on the point of view that one assumes

It cannot be ascertained with absolute certainty how a given tumor will respond to radiation until this therapeutic agent has been applied. The chance is worth taking A doctor's wife came under my observation with a hopeless inoperable carcinoma of the rectum. It was radiated, external radiation and radium being applied to the tumor She is alive and well today—twelve years after treatment A competent pathologist confirmed the clinical diagnosis. This is the exception yes, but if it occurred to a member of one's family it would be much worthwhile

It is generally accepted that radiation has no effect on carcinoma of the stomach (lymphosarcoma excepted), that it does at times afford palliation, but that in the end it does cause the patient to suffer longer This also holds true for lesions of the large bowel At times the radiologist is called upon to treat these patients, and it is difficult to refuse, although the judgment of the radiologist is to the contrary

Dr Meigs's plea for better records is well taken. The factors concerning radiation therapy are usually recorded, but the clinical progress notes are at times lacking In our program in New York State we are endeavoring to encourage our clinics to keep adequate records so that they may be used for study at some future time.

Cancer therapy is not a one-man job but should be done in consultation not only with the radiologist and the surgeon but also with the pathologist The pathologist can at times give valu-

able information as to the therapeutics that should be followed, the parts of the body to be treated, etc. A radiologist should exercise his right as a doctor and make a thorough examination of a patient before the patient is treated. Too many radiologists are no longer clinicians, but they should never side-step the opportunity to examine a patient. This makes for more interesting and thorough radiology.

Radiation sickness has been mentioned several times—some patients have it, others do not. There are no means to my knowledge of telling which patients will suffer from this complication and which ones will not have the slightest sign of any disturbance. Will Dr Meigs tell us whether, in his experience, the voltage, filtration, and amount of the daily increments have any influence upon the occurrence of nausea and vomiting associated with x-ray treatments?

This paper clearly demonstrates that something must be done to prevent patients from seeking aid only in the advanced stages of the disease. It is difficult to diagnose lesions in the abdomen early, but with our modern methods of diagnosis it is not as hopeless as formerly. Education is one of the best methods of cancer control. Make the people acquainted with the symptoms of cancer—this will cause them to seek treatment early in the disease. Advocate the complete physical examination—do it whenever opportunity affords. It is a well-known fact that this is far from an absolute means of discovering intra-abdominal malignancies early but it may help, and reports are appearing which state that some types of malignancies are seen earlier, especially those that are easily accessible.

An effort should be made to combat far-advanced malignancy when diagnosed. All hope

should not be abandoned so far as these patients are concerned. The moribund patient should not be treated, but far-advanced disease should not preclude all treatment. On the contrary, the patient with advanced disease should be given the benefit of what science has to offer.

**Dr Meigs (Concluding Remarks)**—Dr Childs and Dr Kress have shown me that there will be a considerable amount of discussion about the propriety of my paper. I only wish to bring out a few points, and these I think are of great importance when advising roentgen treatment for inoperable cancer.

- 1 The cancer is inoperable, and therefore a cure cannot be expected.
- 2 Therefore, large doses of treatment to cure the patient are not wise.
- 3 Light treatment and careful observation are essential. If any response is elicited, treatment can be increased.
4. The roentgenologist should refuse to treat any patient whom he thinks should not be treated and should certainly refuse treatment unless the surgeon shows him where the tumor is.
- 5 The roentgenologist should view the pathologic slides of the tissues he is to treat to familiarize himself with the types of tumors that respond and those that do not respond.
- 6 Miracles rarely happen, and because one or two patients have been relieved does not mean that all patients should receive as much treatment as can be given.
- 7 To relieve pain and to check fluid are real reasons for x-ray treatment, but to cure inoperable disease is an entirely different thing.

## THE DOCTOR, LIKE ELIZA, CROSSING THE ICE

For some years the medical profession has led a threatened, hectic existence, skating on ice which grows thinner with time, says Dr Lucy Stone Hertzog, in the *Journal of the American Institute of Homeopathy*. Doctors know better than those in any other profession that Eliza crossing the ice was not necessarily fiction, and that the spirit of Legree is roaming at large the world over. While the issues of foreign policy are in the ascendant at present, the domestic issues threatening all medicine do not constitute a subject wrung dry—by any means—and we cannot detach our professional affairs from the political and military problems of the times.

It is self-evident that when there is mobilization of fighting strength in the United States, the medical profession will go into service along with the military, so national matters are very much our business. Because of its importance to military service, the medical profession

stands first in the great danger of regimentation as a so-called emergency measure in national defense. The proposed plans for the federal control of medicine could easily find here a plausible excuse and a ready-made opportunity for those determined on the matter to place medicine beyond hope of return to the sound methods of private practice. We dare not overlook this issue in the midst of clashing war and insane strife of a shocked and reeling planet.

These moves against medicine can be accomplished unobtrusively while the nation and Congress are so absorbed in defense measures that vigilance is relaxed, but disaster cannot strike if we as a united profession marshal our forces to intensify our efforts in each community and state by guiding the medical care of the poor, and demand our rights to be heard as a leading profession in the determination of our future and that of the public.

While serving a year as an intern in a hospital is an important part of American medical training, only 17 per cent of the medical schools of

the country now require it before the M D degree is awarded, figures issued by the American Medical Association show.—*Science Service*

# Case Reports

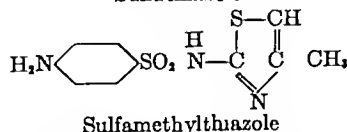
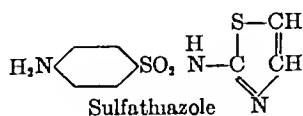
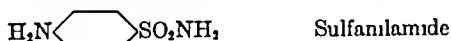
## SULFAMETHYLTHIAZOLE IN THE TREATMENT OF SEVERE TYPE II BACTEREMIC PNEUMONIA

Report of a Case Treated with Recovery, Complicated by Peripheral Neuropathy

SAUL SOLOMON, M D , and MENNASCH KALKSTEIN, M D , New York City

THE advent of chemotherapy has revolutionized the treatment of pneumonia, and many patients have survived who would have succumbed with other methods of treatment. Sulfapyridine has proved to be of such value that either this drug or some substitute will henceforth be employed routinely in the management of pneumonia, although in selected cases drugs may be used in conjunction with specific antiserum.

Despite the excellent results which have been reported with sulfapyridine, the search for other effective drugs is unabated. This is because of the known toxic effects of sulfapyridine and also because certain strains of pneumococci, regardless of type, are resistant to this drug. Sulfamethylthiazole, one of the newest chemicals introduced, is, like sulfapyridine and sulfathiazole, a synthetic derivative of sulfanilamide. The following structural formulas of these compounds will indicate their relationship.



Sulfamethylthiazole is a white powder even more insoluble than sulfapyridine and is supplied in the form of half-gram tablets. This drug was first prepared by Fossbinder and Walter<sup>1</sup> in August, 1939, and has been demonstrated to be of value against the *Staphylococcus*, *pneumococcus*, and *Streptococcus hemolyticus*.<sup>2,3,4</sup>

We have had the opportunity at Bellevue Hos-

pital from the Fourth Medical Division of Bellevue Hospital (Dr. Charles H. Nammack, director), and the Bellevue Hospital Pneumonia Investigation.

The sulfamethylthiazole was supplied to us by the Lederle Laboratories and the Winthrop Chemical Company.

pital to study the clinical effect of sulfamethylthiazole as part of a pneumonia investigation, and our complete data on this subject have not as yet been submitted for publication.\* The case we report here is significant because it illustrates both the great merit of the drug and the only serious drawback to its more general use.

### Case Report

T. H., white man, aged 52, became ill several weeks before admission with a chest cold characterized by cough, mild fever, and substernal soreness. One week before admission he had severe chills and raised a thick brown sputum, these latter symptoms coinciding with the onset of true pneumonia. He continued to work though he felt extremely weak and finally collapsed on April 9, 1940. He was then admitted (on the eighth day of illness) appearing critically ill, with dyspnea, cyanosis, and dehydration. His temperature was 39.4 C on admission and rose quickly to 40.8 C (Fig. 1). On physical examination there were signs of consolidation in the upper lobe of the right lung, and this was confirmed by x-ray (Fig. 2). The white cells numbered 13,150 with 74 per cent polymorphonuclears. The sputum was rusty, mucoid, typing by the direct method and by mouse inoculation yielded type II pneumococci.

A blood culture taken on admission showed many colonies of type II pneumococci, too many to permit an accurate count but estimated to be between two and three thousand per cubic centimeter of blood.

Sulfamethylthiazole was started shortly after admission, 2 Gm. being given at once and 1.5 Gm. every four hours. Because the level of the drug in the blood was not high (16 mg. per hundred cubic centimeters of blood), the more soluble sodium salt of the drug was substituted on the following day, 1.5 Gm. being given every four hours. The concentration of free sulfamethylthiazole rose to 8 mg. per hundred cubic centimeters and remained between 6 and 8 mg. for the next few days.

A favorable effect on the bacteremia was quickly noted, since in twenty-four hours there were only 2 colonies of type II pneumococci per cubic centimeter of blood and within forty-eight hours the blood became sterile and remained so throughout the duration of the illness.

The clinical response was almost equally striking as shown in Fig. 1. The sodium sulfamethylthiazole was continued for eight days to guard against the possibility of relapse. The patient received 8 Gm. of sulfamethylthiazole and

\* Dr. William Kammerer was associated with us in this study.

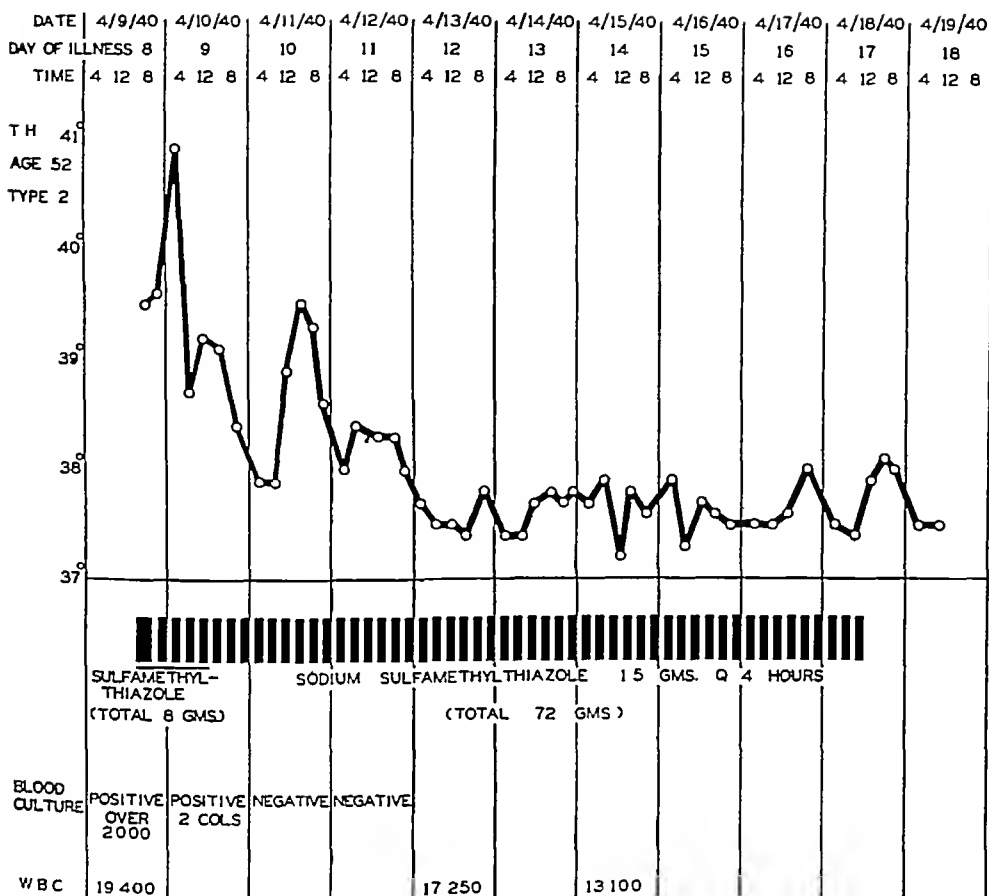


FIG 1

72 Gm of sodium sulfamethylthiazole. No immediate toxic effects were observed.

Following the crisis, the patient ran a low-grade fever for two weeks, although all signs of toxicity disappeared. Agglutinins to the type II pneumococcus were never detected in his blood, though the slide agglutination test was done repeatedly during the period of observation. Furthermore, the Francis test on the twelfth and sixteenth days of illness was negative, despite the fact that the patient was obviously recovering. Because of the intense bacteremia complications such as empyema, endocarditis or meningitis was looked for but did not develop. There was, however, delayed resolution, and several roentgenograms over a period of two months showed incomplete clearing of the pneumonia with slight deviation of the trachea to the right. Bronchoscopic examination revealed no foreign body or any bronchial lesion. The patient was afebrile and completely asymptomatic when he was discharged on June 15, approximately two months after admission.

On July 5 he was returned to the outpatient department of Bellevue Hospital complaining of pain and paresthesias in the extremities with difficulty in walking and maintaining his

equilibrium. He was readmitted to the ward, and neurologic examination revealed definite evidence of peripheral neuropathy. There was moderate weakness in the hands and marked weakness in the lower legs with particular involvement of the peroneal group of muscles. There was a moderate degree of atrophy of the involved muscles. All the reflexes were present except the ankle jerks. There were no pathologic reflexes. His gait was of the stepage type with a tendency to ataxia and swaying. Sensation was normal except for faint and patchy hypalgesia in both feet and diminution of vibratory sense in both feet. Spinal fluid was normal except for a slight increase in protein (50 mg per hundred cubic centimeters). The electrical reactions as determined by Dr F. A. Quadfasel showed a partial reaction of degeneration in the abductor pollicis brevis of both hands and in the muscles of the lower legs and feet.

Treatment consisted of large doses of vitamin B<sub>1</sub>, the B complex, vitamin E, and physical therapy.

After six weeks numbness and paresthesias had practically disappeared. There remained slight weakness in the gastrocnemius and moderate weakness in the peroneal and tibial group and in



FIG 2



FIG 3

the intrinsic muscles of the feet. Ankle jerks were still absent, and vibration sense was still impaired. There was a disappearance of atrophy of all the involved muscles. The gait was considerably improved and ataxia, steppage, and swaying were no longer present. The electrical reactions showed a marked recession of the reaction of degeneration with restoration of response to faradic stimulation.

It is our impression that improvement has been progressive and continuous, although it will require a long period of observation to determine whether or not there will be any permanent impairment of the peripheral nerves.

Serial x-rays demonstrated further clearing of the pneumonia, although the most recent picture taken on August 29 (Fig 3) still showed a patch of infiltration and fibrosis in the upper lobe of the right lung.

### Comment

This report concerns a patient suffering from type II pneumonia with very severe bacteremia, who was treated with sulfamethylthiazole and recovered.

The mortality rate with even mild invasion of the blood stream by type II pneumococcus is extremely high. Bullowa<sup>5</sup> reported that the mortality rate of untreated bacteremic type II pneumonias was 71.6 per cent. Furthermore, he observed that once the blood had been invaded with the type II pneumococcus serum therapy was of little avail. The mortality rate of the corresponding serum-treated group was 64.1 per cent. Cecil and Plummer<sup>6</sup> reported that in a large series of untreated (control) type II pneumonias with bacteremia there were only 3 patients who had more than 5 colonies per cubic centimeter in the blood culture plates who re-

covered. One of these patients showed 68 organisms per cubic centimeter of blood, and his recovery was considered phenomenal. When the number of colonies per cubic centimeter of blood runs into thousands, as in this case, the outcome has been uniformly fatal by any previous methods of treatment. Hence, the favorable result here affords evidence of the potency of the chemotherapeutic agent used in this instance of bacteremic type II pneumonia. Our further experience (to be reported) leads us to believe that it is also effective against other types of pneumonia.

The appearance of widespread peripheral neuropathy during convalescence was attributed to a delayed toxic reaction to sulfamethylthiazole. The neuropathy improved greatly after several weeks. The incidence of this complication is estimated by the manufacturers to be less than 1 per cent. However, because of the possibility of this effect from the use of the drug, the manufacturers decided voluntarily to withdraw sulfamethylthiazole from clinical research.

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RECURRENT PNEUMOCOCCIC INFECTIONS IN NEPHROSIS  
TREATED WITH SULFAPYRIDINE

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WE ARE prompted to report this case of pneumococcic sepsis in a nephrotic child because of the results of treatment with sulfapyridine. The recurrent pneumococcic sepsis and the various purulent complications during this child's illness raised numerous problems of therapy. Many general clinical problems relating to the use of sulfapyridine were clarified in this case.

## Case Report

H. K., a Jewish boy, aged 18 months, was first admitted to the Pediatric Service of the Beth Israel Hospital on January 28, 1939, complaining of swelling of the eyelids of four days' duration.

The family history was negative and irrelevant to the present illness. The child's birth was normal. He was formula fed, and solid foods were added to the diet at an early age. Orange juice was given daily, but no cod liver oil was offered. His development was normal, and the child was always somewhat large for his age. At 6 months he had pertussis of moderate severity and at 8 months he had varicella. No history of renal disease could be elicited. No previous urine examinations were made.

For one month prior to admission the child had not been entirely well. There had been persistent rhinorrhea but no elevation of temperature. Four days prior to admission edema of the eyelids was first noted. The child had urinated frequently for twenty-four hours prior to admission. There was no associated vomiting or convulsions and no other complaints.

**Physical Examination**—The examination revealed a white boy, well developed and well nourished. There was no dyspnea or cyanosis. Marked edema of the eyelids and marked pitting edema of the legs were present. The temperature was 101 F, pulse, 124, respirations, 30. The fundi of the eyes were negative. A mucopurulent nasal discharge was present, and the pharynx was injected. The tonsils were injected and hypertrophied, but both eardrums were normal. There was no cervical adenopathy or rigidity. The lungs were negative to auscultation and percussion. The heart was normal in size and shape, rhythm was regular, and no murmurs were heard. The abdomen was somewhat distended, and a suggestive fluid wave was present. No organ masses were palpated. The extremities, joints, and neurologic examination were negative.

**Laboratory Examination**—The Schick test was positive, the Pirquet and Mantoux test (1 mg) was negative. Blood count revealed hemoglobin, 92 per cent (13 Gm), red blood cells, 5,100,000, white blood cells, 11,200, polymorphonuclears, 76 per cent, and lymphocytes, 24 per cent. Throat cultures showed January 28, 1939—hemolytic streptococci and nonhemolytic *Staphylococcus aureus*, January 30, 1939—*Pneumococcus* type XXIV and hemolytic strep-

tococci. Urinalysis revealed 3 plus albumin, 3 to 4 hyaline casts, occasional white blood cells, no red blood cells, specific gravity 1020, sugar negative. The McClure-Aldrich test was five minutes. Urine culture showed few hemolytic streptococci, *Staph. aureus*—nonhemolytic, enterococcus. The blood sedimentation rate was 120 mm in forty-five minutes (normal rate is 10 mm. in forty-five minutes). Daily blood pressures varied from 80 to 120 systolic and 50 to 80 diastolic. Blood chemistry revealed non-protein nitrogen, 38 mg per hundred cubic centimeters, cholesterol, 454 mg per hundred cubic centimeters, cholesterol esters, 288 mg per hundred cubic centimeters, calcium, 10.3 mg. per hundred cubic centimeters, phosphorus, 3.5 mg per hundred cubic centimeters, total protein, 3.98 per cent, albumin, 0.99 per cent, and globulin, 2.99 per cent. An x-ray of the chest was negative.

**Course**—Two days after admission there was a sudden chill and rise in temperature associated with an increase of abdominal ascites and abdominal tenderness. A blood culture at this time revealed 200 colonies of *Pneumococcus* type XXIV per cubic centimeter of blood. Abdominal puncture in the left lower quadrant yielded 2 cc of a purulent fluid containing many polymorphonuclears and a few lancet-shaped diplococci, which on culture also proved to be *Pneumococcus* type XXIV. At this time sulfapyridine was begun (see Fig 1). The drug was given by mouth except for a few days when because of persistent vomiting it had to be given by rectum. Within thirty-six hours the boy was less toxic, his temperature dropped to normal, and the blood culture was positive in one broth flask only. The abdomen soon became less tender. The blood culture ninety hours after therapy was begun proved to be sterile. With the subsidence of the peritoneal symptoms a small patch of consolidation and fluid was found in the lower lobe of the left lung. The throat culture, which had shown *Pneumococcus* type XXIV earlier, now showed no pneumococci. Temperature and pulse remained normal. X-ray confirmed the pneumonia of the lower lobe of the left lung and pleural effusion.

After two days of normal temperature, sulfapyridine was intentionally stopped. In twenty-four hours the child's general condition again became poor, the temperature rose, and the blood culture showed *Pneumococcus* type XXIV in one of the fluid mediums. Sulfapyridine was resumed with a prompt drop of temperature and sterilization of the blood within twenty-four hours.

During this time the boy's edema increased and became especially marked around the scrotum, which soon was enlarged to the size of a grapefruit. An erysipeloid eruption developed here. Skin culture (done by withdrawal of some fluid into sterile saline) was negative. In spite of a normal temperature, the boy's condition during this period was not good. Two trans-

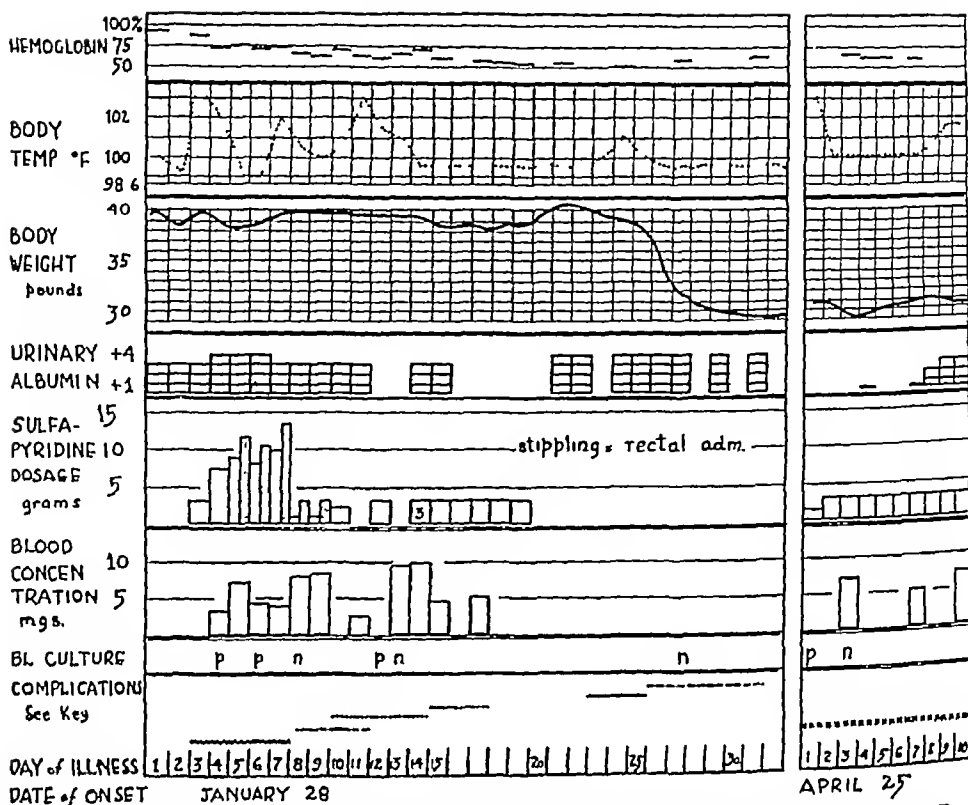


FIG 1 Showing pertinent findings during first and second hospital admissions ——— Peritonitis ——— Pneumonia L L L ——— Erysipeloid reaction on scrotum ——— Erysipeloid reaction on abdomen ——— Otitis media ——— Pneumococcus skin abscesses—thigh ×××× Pneumonia R U L Rt Empyema

fusions and an intravenous injection of glucose 5 per cent in Ringer's solution had to be given. During the following week the erysipeloid eruption advanced slowly, but within a few days it subsided. During this time sulfapyridine was being given (see Fig 1).

In the third week the child's general condition began to improve. The blood culture and ascitic fluid proved to be sterile on examination, but the edema and ascites were markedly increased. However, tremendous diuresis suddenly developed without any special therapy and resulted in a rapid loss of weight. The sulfapyridine dosage was then diminished and stopped as the boy lost his edema.

At this time three large abscesses were first noted on the thighs. These were aspirated and *Pneumococcus* type XXIV was obtained. The blood culture repeated at this time was negative. The abscesses were incised and drained and healed rather slowly.

Following this severe infection with its sepsis, peritonitis, pneumonia, erysipelas, and multiple abscesses, the child's renal condition improved. The amount of urinary albumin diminished, the blood proteins rose, the appetite improved, and the child gained weight. On March 8 a scarlatiniform eruption was noted over the body and extremities. No cause could be found for this. We believed we were dealing with a drug

eruption due to sulfapyridine. The eruption disappeared when the drug was stopped. However, a few days later the drug was again begun, but no eruption developed subsequently. Whether this rash was a toxic manifestation or a drug rash could not definitely be decided. In view of the subsequent history and tolerance of the drug one would favor the former explanation.

On April 2 the boy was discharged from the hospital in good condition. No edema was present. There was very slight albuminuria. The blood proteins were high. The boy was instructed to continue on a high protein, low salt diet and to avoid respiratory infection.

He did well at home for only one week, and then he developed cough and fever associated with moderate dyspnea. For one week the boy was treated at home with sulfapyridine but failed to improve. He was then readmitted to the Beth Israel Hospital on April 25, 1939. At this time he presented no edema. He was acutely ill with marked dyspnea, some cyanosis, and a severe hacking cough. The pharynx was injected, and the ears were likewise full and injected. There was flatness and diminished breathing over the right base and in the right axilla. The heart was not shifted in position. The abdomen showed no ascites and no tenderness and there were no skin abscesses. The urine contained no albumin, red blood cells, or casts.

The blood culture on admission revealed many colonies of *Pneumococcus* type I. Chest aspiration yielded thick pus—growing *Pneumococcus* type I. X-ray of the chest showed a right sided effusion and a pneumonia of the upper lobe of the right lung.

Sulfapyridine was again given and was followed by a prompt drop in temperature and improvement in general condition. Within twenty-four hours the blood culture was negative, but the chest aspiration still revealed thick pus with a positive culture for *Pneumococcus* type I. Three chest aspirations yielded 20 to 40 cc of thick pus. This pus reaccumulated every two or three days, and after several aspirations thoracotomy was done on May 5, 1939. Although the first aspirations cultured *Pneumococcus* type I, the subsequent fluids were sterile. However, smears of the pus showed the organisms.

Although the first urines were found to be negative, massive albuminuria reappeared. However, there was no edema. Blood pressure was 100/80. Blood chemistry was normal with regard to proteins and cholesterol. Following the thoracotomy there was complete recovery in an uneventful manner. The child has remained well for one year. His last urine examination was negative.

### Comment

Nephrosis is frequently associated with pneumococcal sepsis and purulent pneumococcal invasions of the lungs, peritoneum, pleura, and occasionally meninges. These complications occur frequently and often successively in this condition. Many nephrotic children suffer repeated attacks of sepsis with the same organism. The mortality of 50 per cent in some 40 cases of nephrosis we have collected has been due to sepsis—pneumococcal in almost every case.<sup>1</sup> Although the type of kidney pathology in the case we have presented cannot be definitely stated at the present time, it is most likely true lipid nephrosis.

The severe sepsis which this boy survived is rather unusual. We attribute this in part to sulfapyridine. The clinical picture and clinical course seemed to be definitely affected by the administration of the drug. The administration of the drug was followed by sterilization of the blood and sharp drop in temperature, along with general improvement in the toxemia of the child.

The skin abscesses that developed during the sepsis did not become apparent until the drug was discontinued and the edema had disappeared. The latent development of purulent foci has been encountered with sulfanilamide therapy, especially in cases of mastoiditis. The same phenomena seem to occur with sulfapyridine. Skin abscesses are a rare occurrence in cases of nephrosis. It may be that sulfapyridine was instrumental in the formation of these fixation abscesses.

It is more frequent for the same type of pneumococcus to cause the repeated episodes of sepsis

in any single child. In some cases the type varies in different episodes as it has in this case. Indeed we have seen infections with hemolytic streptococci follow pneumococcal infections.

Sulfapyridine seemed to be as effective for the type I pneumococcus sepsis as it was for the type XXIV sepsis. Although we do not know how early in the second attack of pneumonia sulfapyridine was begun and how high a blood level the child had while treated at home, we do know that empyema developed. The empyema fluid did not become sterile as soon as the blood did. Although large doses of sulfapyridine were used and frequent aspiration was resorted to, thoracotomy had to be performed. The bacteriologic examinations of the empyema fluid allowed us to demonstrate the bacteriostatic effect of sulfapyridine on the pneumococcus. Although the first two cultures were positive, the subsequent cultures were sterile in spite of the presence in the smear of the pus of organisms which gave a Neufeld reaction with type I pneumococcus antiserum.

With regard to the dosage and administration we were guided clinically by our experience with sulfanilamide, using 0.2 Gm. per kilogram per day as standard. We gave the drug orally in six-hour divided doses. The rectal doses were given in a specially prepared starch solution in eight-hour divided doses. Apparently a blood concentration of 3 to 5 mg per hundred cubic centimeters of sulfapyridine was sufficient to control the pneumococcus sepsis in this child.

The advantage of a drug such as sulfapyridine in the management of cases of nephrosis with pneumococcal infections is at once apparent. Even if anti-pneumococcus serum were as effective in the therapy of all types of pneumococcal infection, it could not easily be used in these cases of repeated infections without real danger of allergic phenomena. Indeed we feel that the prognosis in cases of lipid nephrosis should be much better since sulfapyridine seems to be a potent chemotherapeutic agent in the management of the intercurrent infections in these cases.\*

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\* Since this case was submitted for publication we have had a child with chronic glomerulonephritis in the nephrotic phase in whom pneumococcus septicemia (type IV) developed along with metastatic peritonitis. In spite of prompt and vigorous treatment with sulfapyridine the child succumbed within thirty-six hours.

We also have knowledge of 2 additional cases of pneumococcus sepsis in children with nephrosis who succumbed in spite of prompt and vigorous therapy with sulfapyridine.

Therefore it would seem that the impressions from our first case were a bit too hopeful.

# Therapeutics

## CONFERENCES ON THERAPY

THESE are stenographic reports, slightly edited, of conferences by the members of the Departments of Pharmacology and of Medicine of Cornell University Medical College and the New York Hospital, with collaboration of other departments and institutions. The questions and discussions involve participation by members of the staff of the college and hospital, students, and visitors. The next report will appear in the March 1 issue and will concern "Digitalis in Heart Failure."

### Treatment of Pneumonia

DR HARRY GOLD The subject of the conference this morning is the treatment of pneumonia. We are fortunate in having Dr Conner here to open the discussion on the general management of the patient with pneumonia.

DR LEWIS A CONNER There is no aspect of medicine in which individual opinions differ more than in the details of treatment, the little details, which make up the general management. I think it might be well to review briefly what has happened in my own personal experience with respect to the methods of treating pneumonia.

Just before I became an intern at the New York Hospital, there was a period of several years when antipyretics seem to have been used as the chief remedy, the antipyretics such as antipyrine and antifebrin (acetanilid) having just come into use. They were used freely to reduce the temperature, of course, with distressing results.

When I was an intern at the hospital we relied upon alcohol almost exclusively as the remedy for pneumonia. It makes me shudder to think of the amounts of alcohol that were wasted and the number of patients' lives that probably were wasted in giving those enormous doses of alcohol, sometimes as much as a pint a day. Such amounts of alcohol must have increased greatly the tendency to peripheral circulatory failure.

Then, for a time, strychnine in large doses was the drug relied upon. Soon after that in the early years of this century there was an enormous enthusiasm for cold-air treatment. Every hospital had to rig up a roof in order to accommodate its pneumonia patients. The half-frozen nurses and half-frozen patients were kept on the roof all through the bitter winter nights, and some of them survived. Then there came a time when we felt that digitalis was perhaps the most important thing in the management of pneumonia. Then came the promising period when vaccines and

serums were used, and now we are in the latest period—that of chemotherapy.

I mention this series of remedies or methods of treatment because it seems to me that it ought to make us cautious about concluding hastily that we have got the answer now. We may have. Probably we have come much nearer to it than ever before, but it may be that in thirty, forty, or fifty years from now our successors will look back and think how gullible we were, just as we look back and think how gullible our predecessors were. There is no judgment that is more difficult to make than that of the effect of therapy. One has to take into consideration a great many things that we often fail to consider when we see some brilliant results or what we think are brilliant results. There are always many factors that cannot be estimated, and one needs to maintain an open mind and a severely critical judgment.

Now as to the management of pneumonia there is no type of patient needing hospital treatment more than the pneumonia patient. He needs a modern hospital bed that can be adjusted to his convenience and comfort. A cool room is essential, even though we do not put our patients on the roof now. We often manage to keep the room too warm, and most patients are much more comfortable when the room temperature is quite low.

It seems to me that we should strive for one thing especially and that is to make the patient as comfortable as possible. He cannot be entirely comfortable, but the saving of his strength, the saving him from pain, the protection of his sleep, and the avoidance of physical effort of various sorts are matters of a good deal of importance.

We ought to avoid the constant fussing around a patient. The nurse is so anxious to do everything that sometimes a pneumonia patient is continually occupied with something—medication, food, poultices, or stupes. He has very little actual rest unless it is care-

fully planned. It is best to group these various ministrations and to make a point of giving patients periods of two or three hours of undisturbed quiet without talking or moving or giving nourishment or medication.

Sleep is a problem. I have nothing to recommend particularly except that I think we should bear in mind when we are using these modern hypnotics that they all tend to disturb the respiratory center. That ought to be taken into consideration. If sleep can be produced by any form of physical therapy, that certainly is to be preferred.

Now as to the question of oxygen administration. I feel that I do not know as much about this as many of the younger men, but it seems to me that, particularly early in the course, the patient is often much more comfortable and is probably better for the use of oxygen. Moreover, I feel that it is desirable to combine it with some carbon dioxide for the stimulating effect upon the respiratory ventilation. There is some reason to believe that local atelectasis may play a part in the beginning of the pneumonic process and that fuller and deeper respiration may possibly lessen the chances of extension of that process.

The relief of pain is a very essential matter. Much of the restlessness, distress, fatigue, and exhaustion of the early days of pneumonia are due to the pain. There are, of course, many exceptions to that statement, but that is the general rule. It is a problem to know how best to relieve pain without giving so much in the way of drugs as to embarrass the respiratory center. Poultices and hot applications sometimes give a good deal of relief and sometimes none. Morphine or one of the opium derivatives is usually essential in the first days of the illness when the pain is apt to be most distressing. It is in the later stage that these drugs are more likely to be harmful, and then it is often possible to get along without them. Morphine, di-*laudid*, or *pantopon* should be used in small doses, frequently repeated. If large doses are given less frequently, one is apt to get into trouble, I think. One-eighth or  $\frac{1}{4}$  grain of morphine sulfate given several times a day will often make the difference between a patient who is reasonably comfortable and one who is in great distress and is being exhausted physically and psychically by his pain.

As you know, pneumothorax has been suggested and used at the beginning of pneumonia in some cases. I have had no experience with it, but at least it seems to relieve pain completely when this is severe. I merely

raise the question whether, in a few cases in which the pain is so extremely severe that it dominates the whole clinical picture, artificial pneumothorax may not only be justified but actually desirable.

Then the question of circulatory failure. It is of the utmost importance for us to realize that in pneumonia we are dealing not with heart failure but with peripheral circulatory failure in almost every instance. That is still not as well understood as it ought to be. Whether the vasodilation is due to a central or to a peripheral action seems to be unsettled, but certainly it is not due to heart failure. Our problem then is the management of peripheral circulatory failure and collapse. It is easier to state the problem than it is to say how it can best be handled. Certainly, digitalis does not serve the purpose at all, and I feel about digitalis now very much as I felt about alcohol after we had got over the alcohol period, and as I felt about strychnine after the strychnine period was ended. Digitalis seems to be of value only in those infrequent cases in which the heart rhythm is disturbed and fibrillation has supervened.

For a number of years the use of digitalis in pneumonia was general, even though a good many of us, I think, were uncertain as to just what it accomplished. Then, in 1915, came the work of Cohn and Jameson, which showed for the first time that in acute infections and fevers such as pneumonia the electrocardiogram showed exactly the same digitalis effects as were seen in patients without infection or fever. That seemed to indicate that digitalis might have the same therapeutic effects as well and seemed to furnish a rational basis for its use in pneumonia. Then years later came the valuable statistical studies from Bellevue Hospital which showed convincingly that the patients treated without digitalis did rather better than those who received the drug.

As I have said, it is easier to recognize the existence of peripheral failure than to know how to deal with it. If such failure has followed prolonged and distressing pain, morphine is probably the most useful remedy. The drugs which, pharmacologically, would seem to be most suitable are ephedrine for its peripheral vasoconstrictor effects and caffeine for its effect upon the vasomotor center, but in actual practice it often is impossible to tell whether they are helpful or not.

Of the complications, severe abdominal distention is one of the most serious and refractory. If any tendency to such distention

exists, it should be combated rigorously by turpentine stupes, gentle laxatives, and the use of the rectal tube. My experience with pituitrin has not been very encouraging.

Pulmonary edema is seen usually as a terminal event for which little or nothing can be done, it is sometimes seen early in the disease, however, and then has a much less ominous significance. The administration of oxygen, the intravenous use of concentrated glucose solution, and dry cupping, all seem to be of value in combating it. Venesection in such emergencies has fallen into disrepute, but I am convinced that there are occasional instances in which it is fully justified.

Dr. Gold. Dr. Plummer will discuss the specific therapy of pneumonia.

Dr. NORMAN PLUMMER. In the case of serum and certain of the sulfonamide drugs, we have available two effective specific agents for the treatment of pneumonia. Serum has been accepted for many years because of its sound immunologic rationale and because of its definite effect on the clinical course and the mortality rate of certain types of pneumococcus. Sulfapyridine and more recently sulfathiazole have been accepted because of their unquestioned clinical value and, in addition, because of their wider scope of action and ease of administration.

Serum and these new chemicals have entirely different modes of action. The sulfonamide drugs seem to have but one action—that of inhibiting the growth of susceptible microorganisms. Serum, on the other hand, is of a more complex nature, furnishing the patient with a variety of antibodies such as the precipitins which neutralize the toxic carbohydrate substance, the opsonins which make the bacteria susceptible to phagocytosis, the agglutinins which cause a clumping of the organisms, and a number of other substances which help the body counteract the infection. It has been aptly stated that serum fortifies the pneumonia patient while sulfapyridine injures the pneumococcus. From this analysis it would seem that the combination of serum and chemotherapy is preferable to the use of either of the drugs alone. Whether this is true is one of the present problems of clinical investigation, and as yet we do not know the answer.

Our recommendation at the present time is that sulfapyridine or sulfathiazole should be given to all patients, except those rare exceptions having known sensitivity to similar drugs, as soon as the clinical diagnosis of pneumonia is made.

Serum treatment, in addition to chemotherapy, should follow promptly the type diagnosis in certain cases. We believe that patients with type III pneumococcus infection, the type still considered the most serious, might well receive the combined therapy. All patients with other types should have the benefit of serum also first, when two or more lobes of the lung are affected, that is, in the more extensive and more rapidly progressive infections, second, when there is a known bacteremia, third, in patients over 50 years of age, fourth, in the group that includes patients in pregnancy or in the first or second week of the puerperium, last, when the treatment is begun after the fourth day of the pneumonia. In these groups we want to use every weapon that we have available at the start of therapy.

When any patient receiving sulfapyridine or sulfathiazole alone fails to show a definite response within twenty-four hours, we believe that serum should also be administered.

The toxic reactions known to occur following sulfonamide therapy are as follows:

1 *Nausea and Vomiting*—Vomiting occurs in 50 to 60 per cent of the cases receiving sulfapyridine in the usual dosage. Nearly every patient has nausea. In some cases the patients cannot describe exactly what is wrong with them, but we can observe it. Nausea and vomiting are much less frequent and less severe following sulfathiazole.

2 *Irritation of the Urinary System*—This is due to the formation of crystals, concretions, or even calculi. Microscopic hematuria produced by this mechanical irritation occurs frequently, but there may also occur gross hematuria, anuria and renal colic, and there may be nitrogen and drug retention. This reaction may follow either sulfapyridine or sulfathiazole.

3 *The Destruction of the Red and White Blood Cells*—This may result in a severe acute anemia or a severe leukopenia or even agranulocytosis.

4 *Toxic Hepatitis*—We have had only 1 patient in our large series in whom we felt that toxic hepatitis and jaundice were definitely associated with sulfapyridine administration.

5 *Drug Rash and Drug Fever*—These two conditions usually are associated but each may occur separately. This reaction occurs more frequently after sulfathiazole than after sulfapyridine.

6 *Effect on the Central Nervous System*—Mild delirium quite often occurs but never

with any serious consequence. Convulsions have been described following overdosage of sulfapyridine.

No absolute contraindication to sulfapyridine or the related chemicals exists except a known sensitivity to the drug. Extensive kidney involvement represents a relative contraindication to its use. Also a marked leukopenia or anemia offers a relative contraindication to the administration of an agent known to affect the blood cells. Furthermore, vomiting has serious consequences in some cases, and in these there is again a relative contraindication to sulfapyridine. On the other hand, some of our most striking therapeutic results have appeared in patients showing a marked leukopenia or a deep jaundice at the time chemotherapy was instituted.

While there are few contraindications to starting sulfonamide therapy, there are definite indications for discontinuing it. If gross hematuria or other evidence of severe renal irritation occurs, if an abrupt drop in the red or white blood cells takes place, if a moderate or severe jaundice appears while sulfapyridine or sulfathiazole is being administered, the drug should be discontinued immediately. Also, if fever persists or a rash develops, it should be discontinued.

The dosage of sulfapyridine or sulfathiazole remains empiric. No definite correlation between the dosage or the blood level of the drug and the clinical response has been ascertained. Some of the most satisfactory recoveries have occurred with a small total dosage and with a low blood concentration. At Bellevue we are continuing to use the dosage recommended by Evans and Gaisford in their original article, that is, 2 Gm. as the initial dose, and then 1 Gm. every four hours. Sixteen grams is about the average total dosage in the uncomplicated cases. Some physicians have used a higher initial dose, even as high as 5 or 6 Gm. of sulfapyridine, and some have given a much larger total dosage. We have obtained the impression from comparing their reports with our own results that the incidence of toxic reactions is higher in the series treated with the larger dosage.

Sulfapyridine and sulfathiazole are usually administered by mouth. Attempts to give these drugs by rectum have failed because the absorption is either very small or entirely absent. Following a method suggested by Blake, the chemists at the Lederle Laboratories have been able to prepare for us a solution of 10 per cent sulfapyridine in 50 per cent glucose. This we have given intravenously,

orally, and rectally without any reactions other than would be expected from the given concentration of sulfapyridine in the blood. When given orally, blood levels similar to those obtained by giving plain sulfapyridine by the same route are procured, but the curve rises more slowly, reaching its peak in twenty-four hours instead of in twelve hours. In a number of patients treated with the solution of glucose-sulfapyridine by mouth, it is our impression that the same clinical responses occurred but with less nausea and vomiting. This confirms the belief that the drug is tolerated better when its level in the blood rises more slowly. When the glucose-sulfapyridine solution is given rectally and also intravenously, a satisfactory concentration of free sulfapyridine in the blood is not obtained. The reason for the difference in the blood levels of free sulfapyridine produced by these routes may be explained by the fact that glucose-sulfapyridine itself is inert but is probably broken up in the gastrointestinal tract before absorption occurs.

The sodium salt of sulfapyridine, which is much more soluble than sulfapyridine itself, may be given intravenously. We suggest that the sodium salt should be used first, when immediate action of the drug is imperative, second, when oral administration is not possible, for instance in certain postoperative and comatose cases, and third, when the absorption of sulfapyridine from the gastrointestinal tract is insufficient.

The general use of intravenous sodium sulfapyridine is to be discouraged for several reasons. It is a highly alkaline solution and severe local reactions and even a slough may occur if the drug seeps into the subcutaneous tissues. Furthermore, the toxic reactions seem to occur more frequently when the drug is given intravenously in this form. Several severe immediate reactions have occurred. One case about which I have first-hand information had a convulsion following the injection of the usual dose. Another objection is the difficulty of maintaining an adequate blood level of sulfapyridine, since intravenous injections tend to produce peak concentrations which fall off rapidly.

Sodium sulfapyridine may be administered orally and also rectally with satisfactory absorption. At first it was believed that there was danger of serious local irritation or possibly necrosis of the mucosa. However, clinical trial has proved that the drug can be administered in this way without local irritation and with satisfactory absorption.

Sulfathiazole has been found experimentally to give about the same results in pneumococcic infections as sulfapyridine. Sulfamethylthiazole, another drug recently introduced for clinical trial, experimentally has the advantage of a wider scope of action. Particularly, it is more effective than either sulfapyridine or sulfathiazole against the staphylococcus. Clinically, sulfamethylthiazole was found to be effective against staphylococcus as well as pneumococcic infections. Peripheral neuritis, however, occasionally followed its use, and because of this serious toxic reaction its further trial has been abandoned.

DR GOLD: I will now ask Dr. Travell to comment on the pharmacology of the agents that have been mentioned.

DR JANET TRAVELL: The use of sulfapyridine and sulfathiazole in pneumonia has been so widely publicized that it would be inappropriate for me to attempt any systematic discussion of their pharmacology. However, I should like to call attention to two facts that have been demonstrated experimentally and that should have important practical applications.

In the first place, it has been shown that different strains of pneumococci, even of the same type, vary widely in their sensitivity to sulfapyridine. MacLeod has produced a "sulfapyridine-resistant" strain of *Pneumococcus* type I by exposing the organism to gradually increasing concentrations of sulfapyridine in the test tube and also by giving subcurative doses of the drug in mice infected with the pneumococcus. Sulfapyridine loses its curative effect in the pneumonias of mice produced by this drug-fast strain. The drug-fastness acquired by the pneumococcus seems to be relatively permanent. Other investigators have also produced sulfapyridine-resistant strains of the pneumococcus. In addition, Schmidt and his collaborators have recently shown that such pneumococci are equally resistant to sulfapyridine, sulfathiazole, and sulfamethylthiazole. Differences in the metabolism of drug-sensitive and drug-resistant strains are being studied and may throw light on the fundamental mechanism of the curative action of these agents in pneumococcic infections.

The possibility of producing drug-fastness of the pneumococcus in pneumonia patients should be considered in connection with the dosage and choice of the sulfonamide compounds. It has even been suggested that whenever possible the tolerance of the organism to sulfapyridine should be determined by

in vitro tests before therapy is instituted. In view of the experimental facts, it would appear that dosage should be intensive at the outset of treatment and continued sufficiently long to prevent relapses. As Schmidt has indicated, it is probably futile to employ another sulfonamide compound when the infection has become resistant to treatment with any member of the group. There is also the possibility that an entire epidemic of pneumonia might be caused by a sulfonamide-fast strain of the pneumococcus, but at the present time this is only a speculation.

The second fact I wish to mention pertains to the so-called "synergism" between sulfapyridine and antipneumococcus serum. It has been shown in *Pneumococcus* type III infections of mice that a dose of sulfapyridine and a dose of antipneumococcus serum, which when used alone affords no protection, when combined procures survival in a majority of the animals. It is possible that these results may be explained by simple summation of the effects of these two agents rather than by a synergism. In any case, the results afford an experimental basis for the combined use of antipneumococcus serum and sulfonamide compounds.

Next I shall make a few remarks about some of the more controversial aspects of the treatment of symptoms arising during the course of pneumonia.

Dr. Conner has said that digitalis therapy in pneumonia is useful only infrequently. That certainly seems to be the consensus, but in spite of the existing evidence the administration of digitalis in pneumonia is still a routine in some sections of the country. For instance, in an article from Alaska published during the past year on the effects of sulfapyridine, I find this statement: "Another interesting feature of this type of treatment (sulfapyridine) is the fact that digitalis was not used for any of the three patients, whereas as a routine we have been using it for all patients with pneumonia." About two and a half years ago an article appeared from Brooklyn on the use of digitalis in pneumonia in which the author states: "I do not believe that the last word has been said about the use of digitalis in pneumonia."

It seems that the routine use of digitalis in pneumonia is not yet dead, and for that reason it seems worthwhile to call to your attention again the evidence obtained in the Bellevue Hospital study of digitalis in lobar pneumonia, published in 1930. About 800 cases of lobar pneumonia were studied, alternate patients,

as admitted, receiving digitalis and the others receiving none. The mortality in the entire digitalis-treated group was 41.4 per cent and in the control group 33.7 per cent, a difference of nearly 8 per cent. The group of patients that received the largest doses of digitalis had the highest mortality. At the time this investigation was started, many of the house staff and attending physicians objected to the withholding of digitalis from pneumonia patients. Before the study was completed, the objection was just the reverse. Other clinical studies on the value of digitalis in pneumonia have employed various schemes of dosage, have often been poorly controlled, and in some instances conclusions have been based on very small numbers of patients. None of these has yielded any convincing proof that as a routine procedure digitalis administration is of any value in either preventing or overcoming circulatory failure in pneumonia. Indeed, the routine use of full therapeutic doses may be dangerous. It should be emphasized, however, that digitalis should not be withheld from those patients showing unmistakable signs of heart failure or in those patients having auricular fibrillation with a rapid ventricular rate.

Dr. Conner used the expression "after we got over the strychnine period," but it seems that strychnine is another drug that from time to time enjoys a revival as a circulatory stimulant. As recently as 1937 an eminent clinician from Boston writes: "We have found strychnine in doses of from 2 to 4 mg ( $\frac{1}{30}$  to  $\frac{1}{15}$  grain), given at hourly or two-hour intervals, an effective remedy in acute circulatory collapse in infectious diseases, and particularly in pneumonia." Such statements appear in spite of the fact that there is not any good experimental evidence, either in man or in animals, that strychnine produces any such effects in doses smaller than those which induce marked hyperexcitability and convulsions.

This matter of strychnine seemed to have been settled by the results of several extensive investigations twenty-five to forty years ago. For example, Parkinson and Rowlands in 1913 carefully measured the effects of a single subcutaneous dose of  $\frac{1}{16}$  grain of strychnine in 50 patients with congestive heart failure, and Newburgh studied the effect of repeated doses of  $\frac{1}{10}$  grain each, in a similar group of patients. One patient received  $\frac{1}{10}$  grain every two hours, making a total of 0.7 grain on the first, 0.7 on the second, and 0.6 on the third day, at the end of each of these days it

is said that "the patient twitched every time he was touched." Although strychnine was given in many times the usual therapeutic dose, none of the patients were objectively benefited, and no consistent changes in pulse rate, respiratory rate, blood pressure, or edema were observed. Newburgh, using  $\frac{1}{10}$  grain doses of strychnine, also confirmed the early observations of Cabot made in 1904 in typhoid fever and pneumonia which showed that strychnine failed to produce any uniform rise in blood pressure in the circulatory disturbance of febrile states. At the present time there seems to be no justification for the use of strychnine as a circulatory stimulant in heart failure or in the acute infectious diseases.

A substance, possibly important in the circulatory failure of pneumonia, which has not been mentioned, is sodium chloride. Inadequate salt intake at a time of blood sodium depletion may result in dehydration of the blood and diminished blood volume and might conceivably be a precipitating factor in the production of circulatory failure. There are suggestions in the literature that the addition of moderate amounts of salt to the diet of the pneumonia patient may prove beneficial. On the other hand, the administration of large amounts of salt, of the order of 30 Gm daily, has been reported as sometimes resulting in the visible accumulation of edema fluid.

The barbiturates seem to be the most popular sedative and hypnotic agents in most conditions, not excluding pneumonia. If small doses of the barbiturates accomplish sedation, their use would seem to be entirely warranted. If these fail, however, the temptation is to give larger amounts, but the administration of larger doses may only increase the restlessness and excitement of the patient. The stimulant effects of the barbiturates are well known, being frequently observed after large doses in animals. Large doses of the barbiturates, as Dr. Conner has mentioned, may also directly depress the respiratory center.

The beneficial action of the barbiturates is usually attributed to indirect effects resulting from the quieting of the patient and the consequent reduction in metabolism. There is another possibility. Experimentally it has been shown that the barbiturates afford marked protection of the respiratory center against depression or paralysis by strychnine, presumably owing to the prevention of fatigue of the center by excessive stimulation. We have shown that within certain limits ethyl

alcohol also is antagonistic to the depressant action of strychnine on respiration. There is, thus, a basis for speculation as to whether in pneumonia suitable doses of these substances may not, under certain circumstances, bring about respiratory improvement not only by indirect effects but also by a direct protective action on the respiratory center. This would serve to raise the threshold of the center to stimulation, with consequent slowing of the already excessively rapid respiratory rate and greater pulmonary exchange.

DR CLARA GROSS I should like to ask Dr Plummer what the optimum dose of sulfapyridine or sulfathiazole for a child of 2 years is? Various figures are given, some quite high and some the opposite.

DR PLUMMER Children should receive about the same dosage of sulfapyridine or sulfathiazole as adults in proportion to body weight. It is true that there has been a difference of opinion, and some pediatricians use a considerably higher dosage than others. Dr Smith, at Bellevue Hospital, reported a large series of cases and states that the smaller dosage can be used just as effectively. I believe he has cut the total daily dose of sulfapyridine from 1 grain per pound of body weight to  $\frac{3}{4}$  grain.

DR EDGAR MAYER If after a few days you discontinue the use of sulfapyridine because of blood destruction and then the blood is restored with transfusions, would you resume therapy with sulfapyridine, and what dosage would you use?

DR PLUMMER We believe that you would get severe reactions again and that it is unsafe as a rule to resume the drug. Two cases of severe hematuria have been reported in which there was a recurrence of severe hematuria when some months later the patients again received sulfapyridine. Judging from experience with similar drugs, when a severe reaction occurs, it is dangerous to use the drug again.

DR CONNER In the cases just mentioned, I suppose the hematuria was the result of local irritation from calculi.

DR PLUMMER Yes, it is our impression that the hematuria has been caused by local irritation from the calculi, concretions, or crystals of sulfapyridine.

DR CONNER There is never a general tendency to bleed?

DR PLUMMER No, we have not seen such a case.

DR GOLD I believe Dr Plummer said that occasionally the toxic effects involve the

destruction of the red cells and the white cells. Is the effect a destruction of the white cells or injury of the bone marrow?

DR PLUMMER I believe that it is primarily an effect on the bone marrow.

DR TRAVELL I should like to ask Dr Plummer if he makes determinations of the urobilinogen excreted in the urine. It has been claimed that that serves as an index to the amount of red blood cell destruction going on in the body. A series of 20 cases was reported in which 8 showed increased excretion of urobilinogen and 3 of those subsequently developed acute hemolytic anemia. Is that a reliable test?

DR PLUMMER We have not made such determinations in any of our cases. I think one criticism of the test is that some increase in the urobilinogen occurs in pneumonia itself. I think that was not fully taken into consideration in that report.

DR GEORGE A SCHUMACHER Dr Plummer, I would like to ask your opinion regarding this problem which comes up frequently in the pneumonia ward. Sometimes it takes a little time after admission to type these patients, or the pneumococci present in the sputum do not type out specifically. Would you go ahead and treat with sulfapyridine regardless of that fact and take the chance that later, owing to changes in the pneumococcus or at least in its capsule, you may not be able to find out what the type was? Furthermore, would you proceed to give sulfapyridine without knowing that the pneumococcus is the etiologic agent, provided you are confronted with lobar pneumonia?

DR PLUMMER Sulfapyridine is such an effective agent that it should be used without delay just as soon as the clinical diagnosis of pneumonia is made, and we should not wait for the results of typing or the results of blood culture. As far as I know, there is no good evidence that sulfapyridine has any effect on the capsule or on the typing of the pneumococci. That was reported at first, but that work has not been confirmed. With recovery of the patient after sulfapyridine therapy, the number of pneumococci in the sputum diminishes, making typing, particularly by the direct method, more difficult. However, the pneumococci that remain are not altered in any way. Furthermore, pneumococci present in pleural or spinal fluids with high sulfapyridine levels can be typed by the Neufeldt method.

DR EPHRAIM SHORR In your discussion of serum therapy you did not differentiate be-

tween horse and rabbit serum I wonder if you would say something about that?

DR. PLUMMER One of the recent developments in the treatment of pneumonia has been the use of rabbit serum. At the present time we are using almost exclusively refined and concentrated rabbit serum. Rabbit serum is preferable because for most of the types it is possible to produce a more concentrated preparation. Also, it is possible to make a potent rabbit serum against all of the pneumococcic types, even type III. Recent reports of cases treated with rabbit serum show fatality rates comparable to those obtained when sulfapyridine is used.

DR. EUGENE F. DuBois What do you do in addition to keeping the patient busy with the dosage of sulfapyridine and with serum, the necessary blood counts, and so on? What other measures do you use in the way of drugs?

DR. PLUMMER We find that we have to use much less in the way of drugs than we did formerly. We use oxygen much less frequently than we did. We use the various measures that Dr. Conner has outlined for pain and occasionally for stimulation of the circulation. It seems to me that we really employ much less nonspecific therapy now than we did formerly.

DR. TRAVELL Is it customary or advisable to give sodium bicarbonate together with sulfapyridine as is usually done in the case of sulfanilamide?

DR. PLUMMER Sodium bicarbonate is frequently used with sulfapyridine, although its value is questionable because we know that renal irritation may occur and sulfapyridine calculi may form even when the urine is alkaline.

DR. CONNER Is the pain usually influenced early in the treatment with sulfapyridine?

DR. PLUMMER I believe that it is. As you spoke about pain in your discussion it impressed me that the course of pneumonia had been considerably altered. It seems to me a long time since we have seen those uncomfortable patients for protracted periods. When we do see them and give them sulfapyridine, I must say that they are usually more occupied by thoughts of their stomach and of their digestion than they are of the pain in their chest.

DR. GOLD We should have a statement about the use of the epinephrine series in the treatment of pulmonary edema in pneumonia. Dr. Eggleston, have you anything to offer on this point?

DR. CARY EGGLESTON I am not enthusiastic about the use of epinephrine in pulmonary edema. I have not, in a number of years past, used epinephrine or any of its derivatives. I do not believe I have ever found it necessary. I think other agents such as morphine in adequate doses, phlebotomy when there is increased venous pressure, and the administration of oxygen suffice. These are much more satisfactory and less risky to the patient than doses of epinephrine or any of its congeners. So my experience with epinephrine in the treatment of pulmonary edema in recent years is nil.

DR. PLUMMER Should we ask Dr. Eggleston if epinephrine is contraindicated in the treatment of severe pneumonia?

DR. EGGLESTON Harking back to Dr. Conner's discussion of peripheral circulatory or vasomotor failure, theoretically it is contraindicated in that condition. Certainly I think experience shows that it is of relatively little use in combating the toxic forms of circulatory failure, and, since some disastrous results have been reported which seem justly attributable to the use of epinephrine, I would personally advise against it. I do not use it.

DR. GOLD How often do patients with pulmonary edema in the course of pneumonia recover?

DR. EGGLESTON You will have to ask the pneumonia people that. They are dealing in statistics.

DR. CONNER I think they do sometimes recover but not usually. Patients with an extensive fulminating onset, particularly in the first two or three days, may have a severe pulmonary edema and get over it, and then run along the normal course. Don't you think so, Dr. Plummer?

DR. PLUMMER I think that is true, and since we have been using sulfapyridine and sulfathiazole we have seen most remarkable recoveries. Some of the most striking responses that we have seen are in those individuals who came into the hospital with circulatory collapse, they may respond quickly to these agents and make most remarkable recoveries. I know it used to be said by many clinicians that they had never seen a pneumonia patient with pulmonary edema recover. I would have differed with that, but I think those people would now change their opinion.

DR. EGGLESTON The important point that deserves emphasis, it seems to me from my relatively limited experience with pneumonia is that the entire clinical picture of the course

of the disease has been changed radically for the better with the introduction of these more potent serums and more particularly with the introduction of sulfapyridine. Certainly, our wards are not filled with the desperately ill pneumonia patients as they used to be.

DR WILSON G SMILLIE Dr Plummer spoke of the ease of administration of sulfapyridine. When sulfapyridine first appeared, physicians breathed a sigh of relief from the administration of serum in private practice, but, as Dr Plummer has described it, the administration of sulfapyridine requires just as close or more close clinical application than does the administration of serum. It is perhaps more difficult to treat the patient in the home with sulfapyridine than with serum itself. Is that so?

DR PLUMMER Yes, I would say that these patients have to be watched very closely and that the pneumonia patient still belongs in the hospital rather than in the home. If you compute the cost of blood counts, urine analyses, and additional laboratory work that has to be done in the sulfapyridine-treated case at the present time, you will find that it costs just as much and there is probably just as great an expenditure of energy in taking care of patients treated with sulfapyridine as with serum.

DR GOLD Dr Travell, would you summarize today's discussion?

DR TRAVELL We have had a bird's-eye view of the therapeutic procedures that have had a vogue in the treatment of this disease during the past half a century, and the moral of this review is a caution against too great optimism in evaluating new remedies. An illustration of this point is the fact that the weight of pharmacologic evidence has disproved the original clinical impression that certain drugs, such as digitalis and strychnine, are of value in treating the blood pressure collapse in pneumonia.

In the management of pneumonia the details of treatment are important, especially those details that insure rest and comfort for the patient. The relief of pain should be secured by whatever measures are necessary, including the judicious use of morphine, poultices, physical therapy, or even artificial pneumothorax.

Sulfonamide therapy has produced such a change in the whole clinical picture of pneumonia that the relief of the pneumonic symptoms, pain, dyspnea, cough, and cyanosis, now rarely presents serious difficulties. Attention is focused rather on the problems arising from the toxic actions of the drugs, such as nausea and vomiting, hematuria, hepatitis, anemia or leukopenia, and drug fever. The clinical advantages of combining antipneumococcus serum and sulfonamide therapy is still a controversial matter, although evidence exists for the belief that combined therapy may be more effective than either serum or a sulfonamide compound alone.

The present status of our knowledge regarding important aspects of sulfonamide therapy has been concisely presented its mechanism of action, the indications for combining serum therapy with it, the contraindications to its use, plans of dosage, the effective routes of administration of sulfapyridine and its soluble sodium salt and some allied compounds. It has been hinted that opinions on these points should not be too fixed and may be modified as time passes. For instance, a total dose of 16 Gm of sulfapyridine seems to be all that is necessary in the average uncomplicated case of pneumonia, but the criteria for dosage are not yet clearly defined, and it is possible that smaller doses may prove equally effective. In children, cutting the total daily dose from 1 gram to  $\frac{3}{4}$  gram per pound of body weight seems not to have reduced the efficacy of sulfapyridine therapy.

## MAINTAINING THE SUPPLY

The decision to exempt medical students from conscription till after completion of their internships assures the nation of a continuous supply of qualified physicians, says the *New York Medical Week*. This is a prime necessity in war or peace. The country would lose more than it stands to gain by interrupting the arduous tempo of the medical course for military training.

It goes without saying that the medical student has as great an obligation as anyone else to share in the defense of his country. The career for which he is fitting himself, however, is an essential part of any preparedness program. He

can render greater service during his period of conscription if he is already equipped with the professional skill he will exercise later on than if he is drafted during his student days, when he is neither physician nor soldier.

For the young men in medical school, therefore, there is no greater patriotic duty than to complete their studies promptly and well. They are being granted deferment because the government believes they can serve the country better after graduation than before. In return for the privilege of completing their professional studies without interruption, they are expected to spare no effort in those studies.

# Medical News

## Southern Medical Association's New President

THE *Southern Medical Journal* in its January, 1941, issue carried the following editorial on Dr Paul Henry Ringer, of Asheville

"A man of many gifts is the new president, Dr Paul H. Ringer, a linguist and a musician, as well as one of the most scholarly members of the medical profession.

"He was born in New York City, November 6, 1881, the only child of Severn and Elisa Minot Ringer. His father, a Pole by birth, was Professor of Modern Languages at Lehigh University. His mother was a Belgian, and an accomplished musician. Dr Ringer attended private schools in New York, received his A B from Columbia University in 1901, and his M D in 1904. He served internships in Bethlehem, Pennsylvania, and New York City, and came to Asheville, North Carolina, to begin practice in 1906. He was associated with the late Dr Charles L. Ninor, and specialized early in diseases of the chest. His years of practice have covered the period of prominence of Asheville in the field of tuberculosis, and he himself has achieved prominence for his work particularly in this disease.

"In 1915 Dr Ringer married Miss Eleanor Varick Morrison, of Asheville. They have two children, Paul, Jr., a graduate of Princeton and now a student at the Vanderbilt University Medical School, and Eleanor, who is at Sweet Briar College.

"In the World War Dr Ringer served as Captain in the Medical Corps of the United States, attached to the Italian Army at Base Hospital 102 in Vicenza, Italy. He has had many medi-

cal and civil honors, including the presidency of his state medical association and of leading organizations for the study and prevention of tuberculosis.

"He speaks French and German fluently, has a singing voice of fine quality, and is a gifted speaker. A fluent writer, he is also an omnivorous reader with a catholic taste in literature. He has made many contributions to medical periodicals. He is broadly civic minded and in Asheville has headed the Community Chest among other charitable organizations, and the Civic Music Association, and he is active in the Presbyterian Church, in which he is an elder. His memberships include the Columbia University Club of New York, Biltmore Forest Country Club, Pen and Plate Club, and the Civitan Club.

"He has been president of the Southern Tuberculosis Conference, has held office in several of the special societies, and is a diplomate of the American Board of Internal Medicine.

"In 1913 he joined the Southern Medical Association and since then has attended twenty of its meetings. In 1928 he was General Chairman of the Asheville meeting of the Southern Medical Association and for six years represented North Carolina on the Council of the Association.

"To a rare degree he combines the qualities of scholarship, ability as an internist and diagnostician, leadership and forceful speaking. Few men have reached the presidency of the Southern Medical Association so well equipped for the office and with such widespread approval of his associates as has Dr Ringer."

## Progress of the War on Infantile Paralysis

SEVERAL important developments were reported at the first annual medical meeting of the National Foundation for Infantile Paralysis at the Waldorf-Astoria Hotel in New York City on November 7 and 8.

Grantees receiving funds are making studies in epidemiology, virus research, relationship of nutrition to poliomyelitis, and the prevention and treatment of the disease. In addition, a program of professional and lay education has been promoted.

Some of the problems are so baffling that the workers can only report progress or tell of promising leads being followed up, but in other cases the news is more encouraging.

### Research on the Virus

The Committee on Virus Research reported that studies were being conducted to determine the nature of the poliomyelitis virus. Paul F. Clark, Ph D, of the University of Wisconsin, has concentrated the virus infected material obtained from spinal cords of monkeys so that infection may be produced in dilution of one part to ten million. Dr Hubert S. Loring, Leland Stanford University, who has been studying the purified and concentrated virus,

concluded that the virus is protein in nature, or contains protein material. The properties and chemical nature of the virus will continue to be studied.

Drs John R. Paul and James D. Trask, Yale University School of Medicine, reported the finding of the poliomyelitis virus in stools of patients, contacts, and in sewage collected from epidemic areas. Dr S. D. Kramer, Michigan Department of Health Laboratories, reported the occurrence of healthy carriers in an institutional outbreak in Detroit.

Reports were made of the efforts to produce infection with poliomyelitis viruses in animals other than the monkey. This confirmed the previously reported findings of Armstrong to the effect that the Lansing strain could be made to produce infection in various cotton rats. All investigators, excepting Dr John A. Toomey of the Western Reserve University School of Medicine, reported that only this one strain could be made to produce disease in the cotton rat. Toomey, however, had success in growing, by a special technique, several other old as well as newly isolated strains in the cotton rat. This observation may be of utmost importance in conducting further clinical and epidemiologic studies.

The distribution of the virus in the body was reported by Drs R D Lilhe, the National Institute of Health in Washington, Albert B Sabin, University of Cincinnati, John F Kessel, University of Southern California, and others. All showed that the virus could be routinely recovered from central nervous tissue of human fatal cases and from experimental animals, and that excepting for tonsils, adenoids, and lymph gland tissue, no other part of the body was shown to harbor the infection.

### Studies of Immunity

Studies on the development of active and passive immunities were reported. *All attempts at producing immunity have thus far met with failure.* Dr Kessel reported that one infection did not routinely protect monkeys from subsequent disease on re-inoculation. He also made the observation that there was little relationship between the presence of neutralizing antibodies in the blood stream and immunity to the disease.

### Investigations of Aftereffects

Reports were received from grantees who are studying both the effects of the disease and the methods of prevention of damage. Dr Donald Young Solandt, University of Toronto, concluded that the muscular fibrillation resulting from nerve destruction is not the primary cause of atrophy of paralyzed muscle. Dr Clinton N Woolsey, Johns Hopkins University School of Medicine, concurred in these results, but Dr Samuel Soskin, Michael Reese Hospital in Chicago, felt that in the animals which he studied fibrillation did play an important part in the degree of atrophy resulting from nerve destruction.

Gross and microscopic pathologic studies of paralyzed muscles carried on by Dr Herbert E Hips, the Crippled Children Hospital in Marlin, Texas, showed that occasionally muscles developed a bandlike form of degeneration, and that when mattress sutures were used to connect the muscle above and below these bands, good functional results were obtained.

### Surgical Treatment

Several studies have been completed and others are still being conducted that measure the end

results of various forms of surgical and conservative treatment. Drs George E. Bennett and Raymond E Lenhard, The Children's Hospital School in Baltimore, concluded that if the maximum benefits of physical therapy are to be secured, patients must be under such care within six months of the onset. They further showed that 97 per cent of all weakened or paralyzed muscles regain the maximum possible strength within eighteen months after onset of treatment. Dr William B Carrell, Texas Scottish Rite Hospital in Dallas, confirmed these observations. In addition, he concluded that rest with physical therapy in the hospital had no advantage over similar treatments given in the home. Hospital care over long periods was of decided advantage only when underwater treatments were used. Dr Carrell also pointed out the disadvantages of plaster casts continued over periods of from four to six months, even when the patients reported for frequent reapplications of the casts.

The value of rest treatment was further emphasized by laboratory studies on infected monkeys. Dr Sidney O Levinson, Michael Reese Hospital in Chicago, showed that monkeys forced to exercise during the active disease process had not only a greater amount of paralysis but also a higher death rate.

### Educational Activities

To inform both professional workers and the public of certain aspects of this disease an educational program has been conducted. An exhibit at the New York World's Fair was viewed by over five million persons. Scholarships have been made available through the National Research Council to physicians wishing to specialize in orthopedic surgery or virology. Other scholarships have been made available to nurses wishing to specialize in the orthopedic aspects of public health nursing. Graduate instruction in physical therapy also has been provided.

Booklets have been prepared and widely distributed dealing with the use of the respirator, the nursing care of poliomyelitis patients, and other phases of the problem.

At this meeting additional grants were recommended for continuation of existing studies or new investigations in the amount of \$137,350.

## County News

### Bronx County

The Speakers Bureau of the county society has compiled a list of medical topics on which its members will deliver free talks before local organizations.

Bronx pharmacists have adopted the practice of delivering prescriptions containing narcotics either to the patient's home or to the prescribing physician's office to thwart users of fake prescription blanks, it was revealed at a recent meeting of the public relations committee of the Bronx County Medical Society.

A resolution was adopted deeming it "poor taste" for prescription blanks to be printed by pharmacists bearing the latter's name. Methods were discussed to amend or revoke the law permitting podiatrists to use the title "doctor" with their names in 1943. It was suggested

that the State Society select an outstanding physician as a candidate for the legislature.

Dr Joseph Golomb, president of the county society, was one of the principal speakers at the dedication of the new \$400,000 Tremont Health Center on January 7.

The county society met at Burnside Manor on January 15 and listened to the following program.

"Allergy in General Practice" by Dr Aaron Brown, "Allergic Dermatitis" by Dr Marion B Sulzberger, Discussion by Dr Abner Stern, Dr David Engelsher, and Dr Samuel Feldman. An elaborate and valuable dermatologic exhibit was also shown.

The number of maternal deaths in the borough of the Bronx in 1940 was less than in previous years by almost 42 per cent.

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# Wyeth's BEWON ELIXIR

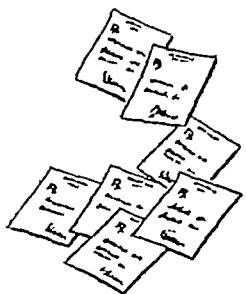
## A Vehicle that Stimulates the Appetite

Wyeth's BEWON ELIXIR is an excellent vehicle for many medicaments. It is compatible with most drugs.

Standardized to contain 500 International Units of Vitamin B<sub>1</sub> (thiamin chloride) per ounce, BEWON ELIXIR stimulates the appetite and is indicated in Vitamin B<sub>1</sub> deficiencies.

*Supplied in Pint and Gallon bottles*

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### Broome County

The members of the county society were guests of the officers of the Thirty-first Medical Regiment at the meeting on January 14 at the Binghamton City Hospital. Lieut-Col R J Wharton, Medical-Reserve Commanding Officer of the 31st Medical Regiment spoke on "The Medical Regiment," illustrated by a sound motion picture. Major Fred L Ritter, Medical-Reserve, Assistant Plans and Training Officer for the 1st Military Area at Syracuse, discussed "The Army Medical Service and the Civilian Physician." Open discussion and questions from the floor followed.

Radio talks were given on the five Thursday evenings in January by Drs F M Dyer, Jacob Zillhardt, C B Henry, R. J McMahon, and Vesta M Rogers.

### Cayuga County

Dr Wilfred Sefton was elected president of the county society at the 135th annual meeting which preceded a dinner in the Palm Room of the Osborne Hotel in Auburn on December 19.

Other officers elected were vice-president, Dr M O Parker, secretary, Dr S J Karpenski, treasurer, Dr Robert J Thomas.

Dr Harry S Bull was elected delegate to the convention of the State Society and Dr George C Sincereaux, alternate. Dr Donald M Green was elected to represent the county society at the convention of the Seventh District with Dr W B Wilson alternate.

The censors chosen consist of Dr W A Tucker, Dr D D Althouse, Dr W B Wilson, Dr L D Burlington, and Dr E H Wood.

### Chemung County

Dr Charles Hendee Smith, of New York University College of Medicine, arranged a course on pediatrics for the Chemung County Medical Society. The first lecture, titled "The Pneumonias of Childhood," was presented by Dr Smith on January 8. Other lectures in the series will be given as follows at the Mark Twain Hotel, Elmira: 6 30 p.m. February 12, "Rheumatic Fever, Chorea and Heart Disease," Dr Katherine Dodge, professor of pediatrics, New York University College of Medicine, March 12, "Preventive Pediatrics and the Periodic Health Examination," by Dr Gaylord W Graves, clinical professor of pediatrics, New York University College of Medicine.

Plans for a fourth lecture on "The Growing Feet of Children" are being made.

### Cortland County

At the annual meeting of the county society on December 20, the following officers were elected for 1941: president, Dr Robert H Brink, vice-president, Dr Harvey S Kinne, treasurer, Dr Bert R. Parsons, secretary, Dr William A. Wall, delegate, Dr James Walsh, alternate, Dr Daniel R. Reilly, all of Cortland.

—Reported by W A Wall, M.D., Secretary

### Delaware County

These officers for 1941 were elected on December 21 at the annual meeting of the county society at the Elm Tree Restaurant in Delhi:

president, Dr Jerome Kogan, Stamford, vice-president, Dr Floyd R. Bates, Walton, secretary, treasurer, Dr Orrin Q. Flint, Delhi, delegate to state convention, Dr Robert Brittain, Downs-ville.

### Dutchess County

The county society held its annual meeting on January 8 at the Hudson River State Hospital. A talk was given on "Diagnosis and Treatment of Arthritis," by Dr Currier McEwen, head of the arthritis clinic at New York University College of Medicine.

The following officers were elected for the ensuing year: president, Dr James T Harrington, Poughkeepsie, vice-president, Dr Edgar F Powell, Fishkill, secretary-treasurer, Dr John F Rogers, Poughkeepsie, secretary, Dr Louis W Stoller, Red Hook, censors, Drs Alva L Peckham, Howard P Carpenter, Gilbert S Tabor, Howard S Bulkeley, Julius E Haight, delegates, Drs Samuel E Appel and Scott Lord Smith, alternate delegates, Drs Earle W Voorhees and James J Toomey.

### Eric County

The medical school of the University of Buffalo is giving a series of free public lectures in January and February on new developments in medical science.

The first lecture was given by Dr Earl D Osborne, professor of dermatology and syphilology, on "What You Should Know About Syphilis," on January 12.

Other speakers are:

January 26, Dr James E King, F.A.C.S., emeritus professor of gynecology, "Common Diseases of Women", February 9, Dr Herbert A Smith, professor of surgery, "Acute Appendicitis", and February 23, Dr David K Miller, professor of medicine, "Foods and Vitamins."

The series is sponsored by the medical school's newly established department of postgraduate and continuation teaching, of which Dr A. H. Aaron is chairman.

The department will conduct the annual two-week postgraduate course for physicians, will bring outstanding medical figures to Buffalo for lectures, will extend medical education to physicians of other counties of Western New York and will disseminate knowledge of latest medical advancement to the public.

The meeting of the section of obstetrics and gynecology of the Buffalo Academy of Medicine on December 18 was devoted to a symposium on "Care of the Newborn." On January 15, the Section of Medicine heard a paper on "Common Errors in Cardiac Diagnosis," by Dr A. C. Ernstone, of the Cleveland Clinic, and on January 22 the Section of Obstetrics and Gynecology listened to an address on "Endocrine Therapy in Gynecology," by Dr R. W. TeLande, of Johns Hopkins Hospital.

The inaugural meeting of the Western New York Surgical Association was held in Buffalo, at the General Hospital on November 26.

The morning Operative Clinics were conducted by the following physicians: Dr James E King, Dr Herbert A. Smith, Dr W W Plummer, Dr D C McKenney, Dr Walter L. Machemer, Dr James C Sullivan, Dr J Sutton Regan.

# THESE NAMES, THESE YEARS HAVE HELPED MAKE MODERN MEDICAL HISTORY

One of a series of advertisements  
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## PARKE, DAVIS & COMPANY

Afternoon clinics and papers were given by Dr C C Cott, Dr D'Arcy MacGregor, Dr Ivan Kocnig, Dr F J Parmenter, Dr Theodore Jacobs, Dr J Sutton Regan, Dr Scott Ryerson, Dr Wallace B Hamby, Dr Paul Searles, Dr Robert P Dobbie

#### Franklin County

A bronze tablet has been placed in the First Presbyterian Church in Fort Covington in memory of Dr William N Macartney, author of "Fifty Years a Country Doctor"

#### Fulton County

Following are the new officers of the county society for 1941 president, Dr Burchard A Winne, Johnstown, vice-president, Dr John R Ford, Gloversville, secretary, Dr Louis Tremante, Gloversville, treasurer, Dr Daniel M McMartin, Johnstown, censors, Drs Harry C Denham, Gloversville, Byron E Chapman, Broadalbin, Avery H Sarno, Johnstown, delegate, Dr Sylvester C Clemens, Gloversville, alternate, Dr Everett N Perkins, Gloversville

#### Jefferson County

The regular monthly meeting of the county society was held on January 9 at the Black River Valley Club Dinner was served at 6 30 "Fever Therapy" was discussed by Dr Nathaniel Jones, resident radiologist at the Strong Memorial Hospital in Rochester

#### Kings County

The Bay Ridge Medical Society marked its twenty-fifth anniversary on January 18 with a dinner at the Hotel Bossert

Dr Maurice Dattelbaum, president-elect of the Medical Society of Kings County, inducted the newly elected 1941 officers of the East New York Medical Society on January 6 at its annual installation meeting Dr Thomas A Gonzales, the city's chief medical examiner, was the guest speaker and discussed "Medical Aspects of Crime Detection"

Dr William Browning, who died on January 5 at the age of 85, was president of the county society in 1901 and was still a trustee at his death He was long its librarian and later directing librarian In 1898 he was one of the founders of the American Medical Library Association and was president of that important national organization from 1917 to 1919 He was the founder and first president of the Associated Physicians of Long Island

Dr Browning also made a notable contribution to the literature of medicine and was widely known for his books and his articles in technical journals

His specialty was neurology, and he was professor of neuropsychiatry at Long Island College Hospital for many years He served as state examiner in lunacy since 1893 Few physicians, declares the Brooklyn *Eagle*, have contributed as much to their chosen field as did Dr Browning

#### Monroe County

The following county society officers have been elected president, Dr C Stewart Nash, vice-president, Dr James K Quigley, secre-

tary, Dr William A MacVay, treasurer, Dr John J Rooney All are of Rochester

Dr James M Flynn, president of the State Society, was the guest speaker at a meeting of the Rochester Society of X-ray Technicians in St Mary's Hospital, Rochester, on January 3

Any defense emergency requiring medical aid in Rochester and Monroe County can be handled by the county medical society, it is announced after completion of a "medical preparedness analysis file" listing the available medical resources in the city and vicinity

Dr C Stewart Nash, new society president, said, "our analysis, based on data obtained from the answers to questionnaires from 546 physicians in a resource study begun last August, indicates the present and possible service which members of the society are best qualified to render"

A Medical Defense Planning Conference was held on January 16 in the Academy of Medicine auditorium, sponsored by the Medical Defense Committee, headed by Dr Clarence P Thomas.

An emergency first-aid training program for all Rochester police and firemen is planned by the safety committee of the county society The city's commissioner of public safety has promised to cooperate

#### New York County

The adoption by The New York Academy of Medicine of a five-year fund-raising program to increase the endowment fund of the academy by \$1,250,000 to carry on without curtailment its multifarious projects in the fields of public health and medical education was announced by Dr Malcolm Goodridge, president of the academy, in his inaugural address commencing his second two-year term on January 2

Under the plan Dr Goodridge announced, "we seek to raise \$550,000 for structural changes in the library and for greatly needed support of our annual budget During this five-year period, it is our hope and intent to increase our endowment fund by \$1,250,000, so that at the conclusion of this lustrum there may be no interruption in academy activities"

The scientific program of the evening was devoted to "Never Knowledge of the Steroid Hormones"

In order to save \$135,000 in x-ray expenses, it is charged, the government has sent 300,000 National Guardsmen to camps without adequate chest examinations—and has thereby assumed a risk of at least \$30,000,000 in future liabilities

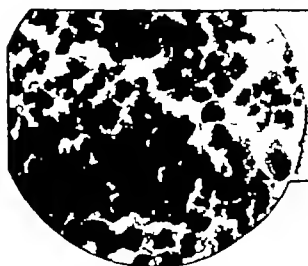
The charge was made by Dr Ramsey Spillman, who told a meeting of the New York County Medical Society, at The Academy of Medicine, on December 23 that he was appalled by the potentialities of the government's action.

The guardsmen's chests were not x-rayed before they went into training, he said, because with the x-ray machines now available, using 14 × 17-inch film, each such examination would have cost fifty cents

Inasmuch as a new fluorograph, using a 4 × 5-inch film will be available next spring and will reduce the costs of the examinations to five cents each, according to Dr Spillman, the procedure was postponed until that time

Here is how Dr Spillman figures the liabilities the U S has risked

# NEW ANTIGONOCOCCIC AGENT



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It has been clearly demonstrated that Sulfathiazole, the latest contribution to modern chemotherapy, is highly effective against the gonococcus as well as several other pathogenic organisms. In some hundreds of recorded cases, gonorrhea has yielded with remarkable promptness to this thiazole derivative of sulfamidamide. According to reports already published, Sulfathiazole conforms to rigid clinical standards for successful chemotherapy of gonococcic infection. In comparison with its pyridine analogue, it is less disturbing to the patient—having less tendency to cause serious nausea or vomiting—an advantageous feature in the treatment of both ambulatory and hospitalized patients.

Incidentally, Sulfathiazole is recognized also as an outstanding anti-pneumococcic and antistaphylococcic agent.

**DOSAGE.** For adults, two methods of dosage have been recommended:

- (a) 1 Gm. (two 0.5 Gm. tablets) four times daily for five days
- (b) 1 Gm. (two 0.5 Gm. tablets) four times on the first day, and 0.5 Gm. (one tablet) four times daily for the next eight days

The total average dosage by either method is 20 Gm. (forty 0.5 Gm. tablets).

Before administering the drug, read carefully the details on dosage, contraindications, side effects, precautions, etc., contained in our pamphlets (sent gratis to physicians on request).

**SUPPLIED.** Sulfathiazole-Winthrop is supplied in tablets of 0.5 Gm. (7.72 grains), bottles of 50, 100 and 500, also (primarily for children) in tablets of 0.25 Gm. (3.86 grains), bottles of 50, 100 and 500. For preparing test solutions, Sulfathiazole-Winthrop is available in bottles of 5 Gm.

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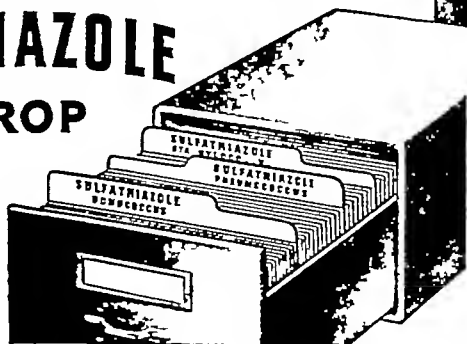


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When the chests of the 300,000 guardsmen now in camp eventually are examined, it may be expected that 10 to 14 per 1,000 will be found tubercular.

This would indicate a total of at least 3,000 cases of tuberculosis among the guardsmen now in camp.

Service disability claims resulting from tuberculosis among World War veterans have cost the U S about \$10,000 each during the last twenty years.

Three thousand cases of tuberculosis among the men now in camp could therefore be expected to cost at least \$30,000,000 during the next twenty years.

### Oneida County

Dr F J Rossi, retiring president of the county society, was the speaker at the annual luncheon meeting in the Hotel Utica on January 9.

Dr William Powell, eighty-four, of Utica, who died on January 9, had practiced medicine fifty-nine years.

### Ontario County

Dr Benjamin R Slater, of Rochester, was the speaker at the quarterly meeting of the county society at the Canandaigua Hotel on January 14. A business meeting was held at five o'clock with dinner later.

At the scientific session, Dr Slater spoke on "Aspects of the Workmen's Compensation Law with Comments on Occupational Diseases," illustrated by lantern slides.

Dr Alfred M Armstrong was host to the Canandaigua Medical Society, on January 9 at his home on the West Lake road. Dr Philip M Standish gave the presidential address.

### Orleans County

Dr Julius Layer of Lyndonville was elected president of the county society at the annual meeting in Albion on December 19.

Other officers elected were Dr James Elson, Albion, vice-president, Dr Ellen M Nicholson, Albion, secretary, Dr Edward T Eggert, Knowlesville, treasurer, Dr R. E Brodie and Dr John Dugan, both of Albion, and Dr Charles Padelford, of Holley, were appointed censors.

The fee schedule for medical and surgical services to welfare clients, as submitted by the Orleans County Commissioner of Public Welfare, was read and discussed at length. This was finally tabled, for although agreement was reached on most items, several important services, it was felt, required further discussion and conference.

The scientific part of the program was presented by Dr Richard Phillips, of Rochester, who spoke on intravenous anesthesia. Following the paper, there was an informal discussion, after which dinner was held at the Orleans Hotel.—*Reported by Ellen M Nicholson, M D, Secretary*

### Oswego County

Dr F Edward Fox has been elected president of the county society for the coming year.

Other officers elected are Dr Grover C Elder, Oswego, vice-president, Dr Harold F

McGovern, Fulton, secretary and treasurer, Dr K Wood Jarvis, Oswego, censor, Dr H M Wallace, Oswego, delegate to the state convention.

### Queens County

The survey of free service rendered by doctors in one Queens hospital showed that each doctor gave \$6,000 worth of service in 1939. This survey was so well thought of that the United Hospital Fund is using it as a sample to check all the hospitals in New York City.

### Richmond County

The county society met on January 8 at the borough Health Center, and, after a brief business session, Colonel-Dr Louis H Bauer, of Hempstead, first vice-president of the Second District Branch of the State Society spoke on "Medical Military Preparedness"—*Reported by George W McCormick, M D, Secretary*

### Saratoga County

A course of lectures on treatment of common diseases, sponsored by the Council Committee on Public Health and Education of the State Society, was arranged for members of the Saratoga County Medical Society by Dr Clayton W Greene, Buffalo, in January.

The meetings were conducted at Saratoga Hospital each Wednesday. The last two lectures in the course were given in cooperation with the State Department of Health.

### Schenectady County

The county society met in the auditorium of the Nurses' Home at Ellis Hospital on January 7.

The business meeting was followed by a talk by Dr F A D Alexander, director of the department of anesthesia at Albany Hospital, on "Anesthesia for Abdominal Surgery."

### Suffolk County

A forward step, unique in the public health field, says the *State Charities Aid Association News*, was taken by Suffolk County, October 29, with the authorization by the Board of Supervisors of a \$17,525 appropriation to establish a new Mental Hygiene Service in the County Health Department. This is probably the only instance in this country where such a department has assumed complete responsibility for a psychiatric clinic. The full-time staff will consist of one psychiatrist, one psychologist, two psychiatric social workers and a secretary.

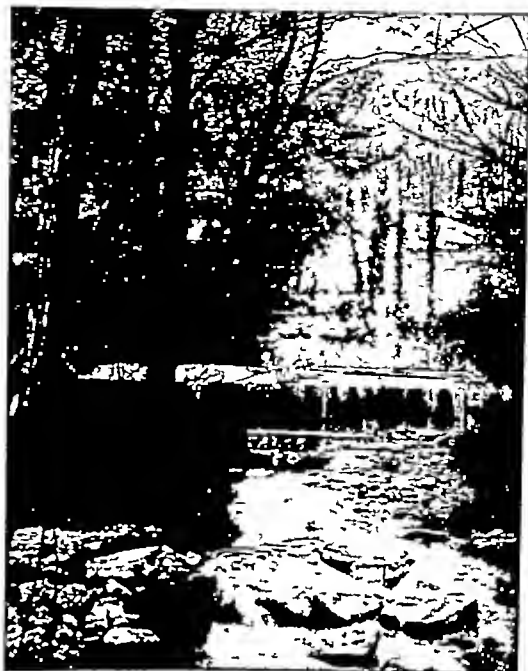
The plan for the service was developed under the leadership of Dr William Ross, of Brentwood, president of the County Board of Health. "We are just as much obligated," he said, "to carry on a program for the prevention of mental illness as the one we have engaged in for the prevention of physical illness."

### Westchester County

The county society met on January 21 at the New York Hospital at White Plains and listened to a paper on "Some Suggestions for the Treatment of Chronic Arthritis for General Practitioners," by Dr Loring T Swam, Boston.

The Westchester Cancer Committee announces that a course of ten lectures for physicians inter-

# Hydro-Choleresis relieves Biliary Stasis



*"... Will run still more swiftly if encouraged"*  
—Ovid

● Stasis of the bile tracts occurs in cholecystitis, cholangitis, and hepatic dysfunction with congestion. Stasis may be eliminated by the mechanical "flushing" action of the free-flowing aqueous bile resulting from hepatic stimulation with Ketochol.



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KETOCHOL is a combination of the oxidized, or keto form of those bile acids (cholic, desoxycholic, chenodesoxycholic and lithocholic) normally present in human bile.

Average dose: one tablet t i d with or immediately after meals. Supplied in bottles of 100 and 500 tablets.

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ested in the practical application of radiation therapy in all its forms will be given each Tuesday afternoon starting on Tuesday, January 28, 1941, at 4:30 o'clock, in the offices of the Westchester Cancer Committee at 89 Pondfield Road in Bronxville.

These lectures will be given by Mrs. Edith H. Quimby, associate physician at the Memorial Hospital in New York City. Mrs. Quimby is a recognized authority on radiation therapy, having published more than fifty papers and five books on various physical problems in relation to radiation therapy.

This course of lectures should be of great benefit to physicians desiring to bring themselves up to date on the subject and may be looked upon as a step toward qualification in this field.

The Westchester Cancer Committee has recently purchased 173.3 mg of radium from the Manhattan Eye, Ear and Throat Hospital. The committee now has 308 mg of radium in its possession and is thus enabled to serve two clinics at once.

Admission to the course of lectures will be by written application and payment of a registration fee of \$5.00, covering the entire course of ten lectures. Interns in Westchester Hospitals will be admitted, by application, without payment of a registration fee.

### Wyoming County

A teaching day program was arranged by the Council Committee on Public Health and Education of the State Society for the members of the county society, given on January 8 in the Castile Sanitarium.

The subjects discussed were the use of biologicals in the diagnosis and treatment of communicable diseases, with discussions of techniques and results by Dr. Francis J. Gustina, assistant professor of pediatrics, University of Buffalo, and the hemorrhagic states of pregnancy, by Dr. W. L. Ekas, assistant professor of obstetrics and gynecology, University of Rochester Medical School.

### Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
William Browning	85	Leipsic	January 5	Brooklyn
John H. Crosby	66	L. I. C. Hosp.	December 19	Fultonville
Adelbert C. Douglass	66	L. I. C. Hosp.	January 3	Ilion
Leo C. DuBois	54	Cornell	January 8	Newburgh
Henry B. Henson	71	N. Y. Univ.	December 27	White Plains
David S. Herman	44	P. & S. N. Y.	January 11	Richmond Hill
Mansfield G. Levy	54	Buffalo	December 31	Buffalo
Moe J. Mayer	50	N. Y. Hom.	November 7	Bronx
James M. O'Neill	61	McGill	January 5	Harrison
William Powell	84	L. I. C. Hosp.	January 9	New Hartford
George H. Rockwell	62	Syracuse	December 30	Syracuse
John F. Simpson	74	Bellevue	December 31	Brooklyn
Bruno H. Wolff	49	Berlin	December 26	Tonawanda

### NEW PLAN TO CONTROL MEDICAL TESTIMONY IN MINNESOTA

A new plan for control of dishonest medical testimony was officially adopted by the Council of the Minnesota State Medical Association at its regular fall meeting held September 22, at St. Paul, we are told in *Minnesota Medicine*.

This plan is the result of conferences between a special committee appointed by President B. S. Adams, of Hibbing, and representatives of the Minnesota State Bar Association.

No change in legislation is contemplated in the plan submitted by Chairman E. M. Hammes, of St. Paul, and approved by the Council. Instead, a permanent Committee on Medical Testimony of the Minnesota State Medical Association will be formed. Services of this Committee will be put at the disposal of any judge in the state who has reason to believe that medical testimony in any case decided in his court has deliberately deviated from the truth.

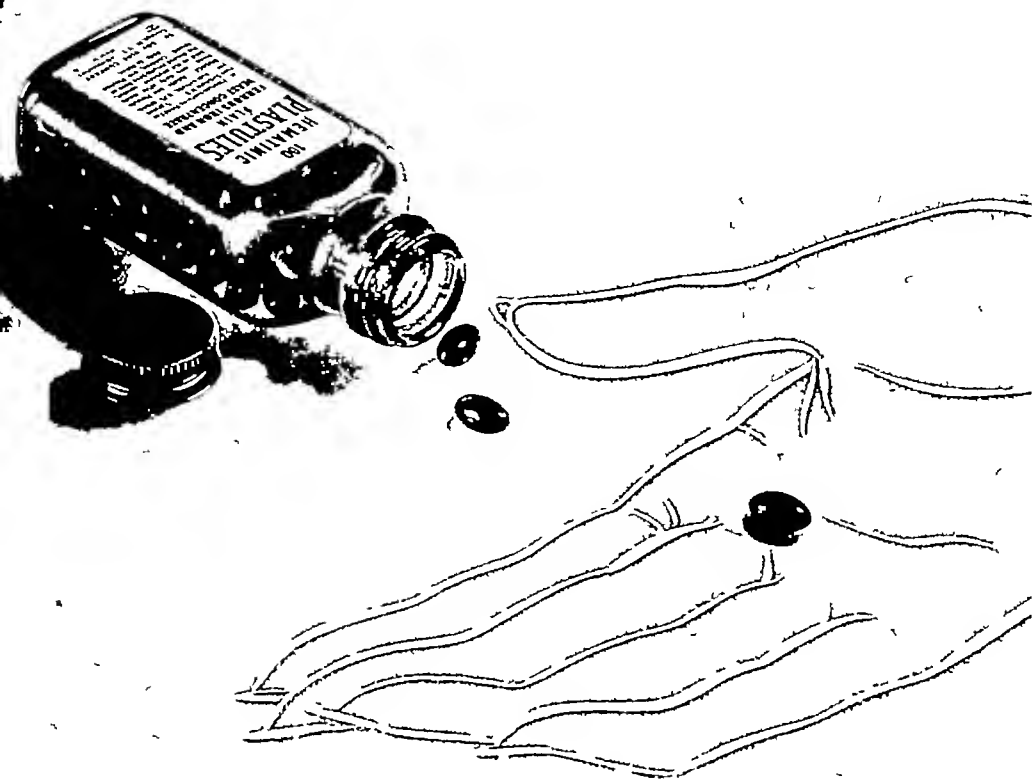
Judges will be invited to submit such cases to the Committee for investigation and study.

If, upon close investigation, it appears to the Committee that the testimony of the physician was indeed dishonest, the case will be turned over, together with all findings, to the State Board of Medical Examiners for disciplinary action.

Offenders who are thus reported to the State Board will be subject to censure and warning or to suspension or revocation of their license to practice medicine, according to the judgment of the Board.

"Honest differences of opinion exist, of course," Dr. Hammes pointed out in his report. "Every allowance should be made for such differences wherever the point at issue admits of honest disagreement on the part of medical witnesses called."

"The plan is not designed to eliminate differences of opinion but to control the occasional 'shyster' physician who, like the 'shyster' lawyer, makes a farce out of justice and casts discredit upon his entire profession."



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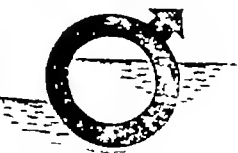
**Rx HEMATINIC PLASTULES PLAIN**

Suggested dosage—1 T I D after meals  
or

**HEMATINIC PLASTULES with LIVER CONCENTRATE**

Suggested dosage—2 T I D after meals

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# Hospital News

## Hospitals Plan for Defense

WAR hospital units are now being organized by 59 hospitals and medical schools in various parts of the country, reports Dr. Malcolm T. MacEachern, of the American College of Surgeons, in *The Modern Hospital*, and he goes on to inform us that some 1,500 physicians and surgeons now on the staff of these medical schools and hospitals have applied for commissions in the medical corps reserve of the Army in order to qualify as officers of their units when and if the units, which will be equipped by the Army, are called up for active service.

### An Encore

Institutions that have been asked to form units are, in general, the same that supplied units for hospital service overseas in 1917 and 1918, whose performance was so valiant and satisfactory that the War Department is now eager for preparedness of the same type from the same sources.

In the World War the units were organized through the American Red Cross and they equipped themselves. Present plans of the War Department call for 62 units, 32 of which are to be called general hospitals, 17 evacuation hospitals, and 13 surgical hospitals, each bearing the name of the sponsoring institution and serving as an affiliated unit of the medical department of the Army. Ordinarily, one field army has 10 surgical hospitals, 12 evacuation hospitals, and one hospital for convalescent cases.

The general hospitals are out of the zone of operations and about 50 of them with 1,000 beds each are required for each field army. Airplane ambulances and landing fields for them are factors to be considered in planning the locations of present-day general hospitals.

So far, the organization work has not gone much beyond selection of officer personnel, with nurses, enlisted men, and technicians to be enrolled for the units later. The purpose of organizing the units at this time is to assure the advantage of having men who are used to working together continue to do so under the stress of war conditions, if they materialize.

Three score or so of our largest hospitals and the medical schools with which some of them are affiliated are taking care of this for the time being. The remaining 6,166 hospitals cannot commit to them, however, the entire burden of national defense.

### How to Help

A specific example of a way in which any hospital, small or large, can help is furnished by an institution in a small community which a couple of years ago formed a nurses' club with the idea of providing social and professional contacts for nurses in the locality who were not near enough to their nursing schools to be able to make contacts with other alumnae.

When the defense program was started, it became evident that here was a good source of additional nursing material. Several nurses who have married and ceased to practice their profession are taking refresher courses in the hospital

and are planning to register for service if needed. This idea, which was described at the hospital administrators' institute in Chicago in September may be extended to include technicians, dietitians, and other specialized personnel, as well as recently retired physicians who will be valuable for home duty in an emergency.

### Must Analyze Own Needs

Each hospital must analyze the needs and possibilities of its own community and intensify its efforts to meet peacetime conditions so well that no catastrophe, be it earthquake, fire, or flood, will find it unprepared. Out of extraordinary effort to meet conditions as they arise, including the changes caused by expanding industrial activity, will come a large part of the necessary preparedness for possible war.

## The Wail of the P A

(With Apologies to Ogden Nash and Arthur Guiterman)

IF YOU think your vocation is trying,  
Consider what a hospital is buying  
For here are the things you have to know  
The Superintendent told me so  
You have to know how to get things reasonable,  
Whether in stock or out of seasonable  
You have to buy from the local boys,  
For they can make a terrible noise  
If you don't, because all the cash that they pay  
in—

To community chests they expect to make hay  
in,

Yet everything has to be inexpensive,  
Whether orders are large or unextensive  
But here's what makes me want to shout  
I'm expected to know all things about  
*Applicators, aspirators,  
Tongue depressors, nurses' dressers,  
Sterilizers, surgeons' visors,  
Anesthetics, dietetics,  
Window screens and lima beans,  
Thermostats and rubber mats,  
Asiatic flooring, shelves for storing,  
Surgeons' wipes, fittings, pipes,  
Infants' cribs and babies' bibs,  
Regulators, respirators,  
Rubber sheeting, things for eating,  
Window shades, gardeners' spades,  
Engines, boilers, rags for oilers,  
Galch springs, rubber rings,  
Gaseous mixtures, bathroom fixtures,  
Razor blades, gowns for maids,  
Cystoscopes and fracture ropes,  
Cotton, gauze, drinking straws,  
Soaps and powder, clams for chowder,  
Butter, eggs, wooden legs,  
Instruments, shirts for gents,  
Knives and forks, druggists' corks,  
Electric lamps, artery clamps,  
Nurses' books, pots for cooks,  
Keys and locks, timing clocks,  
Pillow cases, flower vases,  
Microbe slides and chair glides,  
Buckets, pails, tools and nails,*

# Thantis Season

Wintry weather brings with it the usual prevalence of throat affections

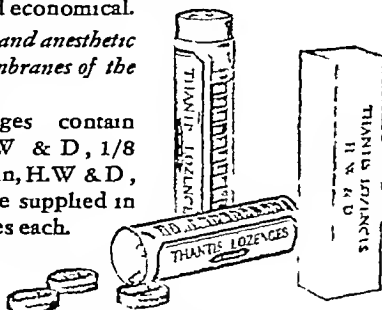
Thantis Lozenges, H. W. & D., were developed for medical use in the treatment of throat soreness and irritation and following tonsillectomy. They dissolve slowly, permitting prolonged throat medication.

## Thantis Lozenges, H W & D

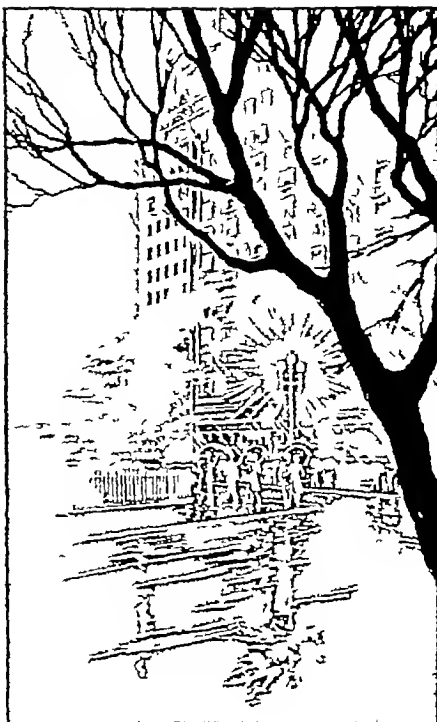
are convenient and economical.

*They are antiseptic and anesthetic for the mucous membranes of the throat and mouth*

Thantis Lozenges contain Merodicein, H. W. & D., 1/8 grain, and Saligenin, H. W. & D., 1 grain. They are supplied in vials of 12 lozenges each.



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of

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Nurses' calls, paints for halls,  
Birds-eye diapers, window wipers,  
Lagatures, pipe for sewers,  
Rubber nipples, chairs for cripples,  
Paper, pencils, ink, and stencils,  
All these things, and hundreds more,  
To mention which would be a bore  
So I spend all my days weighing quality and cal-  
ory,*

*"Til sometimes I get so dizzy I actually wonder  
Whether I cannot reduce the cost of my salary,  
But to do that, I believe, would be very ridicu-  
lous,*

*For, after all, sometimes we can be too meticulous  
—John H. Hayes, in The Modern Hospital*

### Newsy Notes

The annual conference of the State Hospital Association will be held in New York City on May 20 to 22, 1941

Leighton R. Arrowsmith, president of the Greater New York Hospital Association, has received the following information from Dr. Samuel J. Kopetzky, Colonel-MC-R-USA, Medical Division, about the investigation of hospital records of prospective draftees

1 The local boards have authority to subpoena hospital records in their investigation of claims made for or against the medical status and economic condition of prospective draftees

2 In carrying out this provision, the local board may issue subpoena to get information in the process of their investigation. In answering such subpoena for information and records, this office considers that the subpoena is complied with if you send by registered mail an abstract of the required history and a summation of the case sufficient for the local board to get the determining factors which they are seeking in the case. This material can also be delivered by a messenger or clerk in the record office

3 While the subpoena will call for the presence of the superintendent, this is to be interpreted simply that one of his representatives or the mail as above indicated is required.

Alhany Hospital has made a survey of the possibility of expansion to receive war casualties and finds it could add 360 beds with no additional building program. About \$135,000 would be needed for new equipment and structural changes, and government aid would be essential.

A blood plasma bank will be installed at the Lewis County General Hospital

Buffalo Children's Hospital has laid a new type of rubber flooring in its surgery suite. It contains a wire mesh, grounded to carry off electricity and to prevent sparks that sometimes cause anesthetics to explode

The army hospital at Fort Ontario, Oswego, is being enlarged and newly equipped to receive

over 100 patients. Twelve surgeons are on the staff

The financial plight of New Rochelle Hospital has become so distressing that a special campaign is on to raise funds to pay off mounting debts for operation of the institution, says a local paper

One of the items that has added to the gravity of the situation is the fact that the hospital has been unable to pay the bills of local merchants. This item alone amounts to about \$70,000

A major cause of the plight is the fact that 1,683 indigent and destitute patients received service from the hospital in the past year at a cost of \$155,889. For these services the hospital received only \$71,342

The three State hospitals in Suffolk County have a total of 5,682 aliens out of 22,380 patients, which is more than half the estimated 10,000 aliens registered throughout the county during the past four months, it is learned. Pilgrim State Hospital at Brentwood, which has 9,060 patients, led with 2,487 aliens. At Central Islip State Hospital officials reported there are 2,005 aliens out of 7,330 patients, and Kings Park State Hospital has 1,100 aliens among 6,000 patients.

The Mary Imogene Bassett Hospital at Cooperstown is offering the general public a short series of Sunday afternoon talks on outstanding diseases and newer methods of treatment.

Only two maternal mortalities out of 1,400 cases have occurred at the Good Samaritan Hospital in Suffern in six years

William T. A. Webb, of Sidney, Delaware County Member of Assembly, has indicated that he will propose a bill at the legislative session to make the care of patients at the state tuberculosis hospitals a state charge. Mr. Webb's measure would attempt to make the change retroactive

Delaware County supervisors have indicated they will await the outcome of the action by Chenango and Madison counties in fighting the payment of such charges by the Homer Folks Hospital at Oneonta. The claim against Delaware amounts to about \$56,000

These counties maintain that the bills of the hospital are illegal and also that they have no information as to whether the individual charges are proper claims against the counties. Otsego concurs in this feeling but has authorized the payment, when audited, of \$51,000 toward a total claim of over \$100,000

A group of doctors headed by Dr. M. A. Mason and B. L. Lurie has completed arrangements for conversion of the Kew Gardens Hotel, Kew Gardens, Queens, into a general hospital to meet growing demands in Queens for hospital and medical facilities. More than \$200,000 will be spent in modernizing and equipping the present structure for opening in February

### Improvements

St. Francis' Hospital in Poughkeepsie is planning a \$100,000 addition.

# Hospitals and Sanitariums

*Institutions of Specialized Treatments*



## A SYMPOSIUM of MEDICAL OPINION\*

Has Been Expressed by Many Prominent Physicians on the Treatment of Drug and Alcohol Addiction at

### THE CHARLES B. TOWNS HOSPITAL

293 CENTRAL PARK WEST, NEW YORK, N Y

FOR DRUG AND ALCOHOL PATIENTS EXCLUSIVELY

**40  
SUCCESSFUL  
YEARS**

\* We will be pleased to send a copy of the Symposium (printed exclusively for the medical profession's information), and/or a copy of a treatise "Drug and Alcohol Sickness" to physicians on request



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Disorders of the Nervous System  
**BEAUTIFUL—QUIET—HOMELIKE**

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**CENTRAL VALLEY, Orange County, N Y.**

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Henry W Lloyd, M.D., Physician-in-Charge

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For treatment of Nervous and Mental Disorders, Alcoholism and Convalescents. Carefully supervised Occupational Therapy Facilities for Shock Therapy Accessible location in tranquil, beautiful hill country Separate buildings

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**SANITARIUM**

For individual care and treatment of selected number of Nervous and Mental cases Epileptics and Drug or Alcohol addicts Strict privacy and close cooperation with patient's physician at all times Successful for over 50 years

ARTHUR J CAPRON, Physician-in-Charge

**OWEGO, TIAGA CO., N. Y.**

## TERRACE HOUSE

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A private sanatorium offering a specific treatment for alcoholism formulated to relieve the craving for alcohol and with re-education working toward permanent abstinence. Homelike surroundings. Competent medical and nursing care 16 miles from Buffalo

*Moderate rates—Enquiries invited*

64 Maple St. - East Aurora, N. Y. - Phone 784

A proposal to build a \$200,000 general hospital of 132 beds on the Rosenbaum estate at Roslyn has been taken under advisement by the Village Board. The hospital will be one of the largest of its kind in this area, according to the tentative plans. The offer was submitted by Dr. Louis S. Bardoly, of Cleveland, through his architect, Herbert Tannenbaum, who said "Every feature of a large city hospital will be included and all efforts will be made to take it out of the private class and make it a community affair."

Tenth avenues, Manhattan. It will increase its present capacity to 300 beds.

The Father Duffy Post of Catholic War Veterans has presented an iron lung to Misericordia Hospital.

A 20-bed hospital has opened in Canton.

Vassar Hospital, Poughkeepsie, is adding a new dietetic laboratory.

Work has started on the six-story addition to St. Clare's Hospital, adjoining its present building on 52nd and 53rd streets, between Ninth and

University Hospital of the Good Shepherd, Syracuse, is undergoing extensive renovation.

## KEEP ON PITCHING

"Keep on pitching, doctor!" exclaims the editor of the *Kansas City Medical Journal*, Dr. E. H. Skinner. "There are nine innings to every ball game," he reminds us. "This old world has seen a lot of battles. And it just keeps on turning around. The sun still has a chance to shine every day. There have been a lot of pestilences that have taken more people than battles. Thanks to doctors, pestilences are no more. Possibly we should try a little medical research upon war or upon ruthless maniacs who are deluded with the idea that power and force are commendable items of human behaviorism."

"This European cataclysm makes a lot of our individual, and even governmental interests look very small and immaterial in comparison. But there are reasons why we should not give up any of our objectives. We are going to have to give up a lot of things but let us hang on to our priceless heritage of Freedom just as long as we live. Our forefathers fought for the priceless heritages of our democracy and plenty of them died for their ideals. This world situation has not yet reached any such tragic outlook but we are going to have to sacrifice so many of our worldly and comfortable conveniences that a lot of weak sissies are going to feel you are taking their life's blood."

"It would not be surprising if the politicians took advantage of the present emergency to try to regiment the medical profession as a defense measure. You must keep on pitching, doctor, for these politicians are wise boys and they know how susceptible your clientele is to that old emotional appeal for something more for nothing. We are going to have to give and give up. But we must keep up our courage and our freedom and our priceless heritage of democratic ideals."

"Doctor, you will never get a chance at another game as fine as it is played in America. So, keep on pitching, doctor!"

## DIAGNOSIS—LAZY FEMALE

*He said—sweetly*  
Your nerves are slightly out of kilter  
Your liver's just a little off  
If you'll go home and get some rest  
Your head upon a pillow, soft  
And every hour chew one of these  
I think that they should stop that pain  
But if they don't just call again

### *He thought*

Boy, but I could go to work on you  
I'd have you scrub your face first thing  
Fat old hen, all painted up, you look like sin  
And every morning bright and early  
I'd walk you forty hocks, old girlie  
And feed you spinach, squash, and lettuce  
Your hide, gee, what an awful mess that is  
I'd put a corset on you honey  
For when you walk, you shake so funny  
Take off those shoes—for love of heaven  
She's got size 4's, they should be seven  
In fact I'd do a lot for you  
If you would only let me  
But if I told you what I thought  
Nobody'd have to bet me  
That you'd go see Doc Jones instead  
And pay him to put you to bed,  
And as you're going to pay somebody  
It might just as well be me

—Ruth Elliott in *Utica Academy of Medicine Bulletin*

## NO WISH TO SEEM QUEER

"You inherited quite a nice little fortune," said the doctor.

"Yes," replied the fortunate youth.

"I suppose you will pay a lot of your debt now?"

"I had thought of it, but I concluded to make no change in my manner of living. I don't want to be accused of vulgar display."—*Case and Comment*

Mr. Haveadrink is being examined by his physician.

Dr. Sorry: "I can't find any cause for your troubles. I think it's due to drinking."

Patient: "Well, maybe I had better come some time when you are sober."—*Med. Record*

How eye accidents are prevented in industry, through education of workmen and the use of goggles, masks, and other protective equipment, is dramatically portrayed in *The Eyes Have It*, a new sound slidefilm sponsored by the National Society for the Prevention of Blindness.

## THE MAPLES INC, ROCKVILLE CENTRE, L I

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**MRS M K. MANNING, Supt.** - **TEL · Rockville Centre 3660**



## LOUDEN - KNICKERBOCKER HALL, Inc.

51 LOUDEN AVENUE

Tel. Amityville 53

AMITYVILLE, N. Y

A private sanitarium established in 1886 specializing in NERVOUS and MENTAL diseases

Full information furnished upon request.

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 President

New York City Office  
 67 West 44th St., Tel VANDerbilt 6-3732

**JAMES F VAVASOUR, M.D**  
 Physician in Charge

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Separate accommodations for nervous and backward children. Physicians' treatments rigidly followed

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 N Y Office—67 W 44th Street  
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 C L MARKHAM, M.D., Supt.

## FLORIDA MEASE HOSPITAL

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Recognized, fully-equipped general hospital  
 All specialists available  
**DOROTHY LORD, Sec'y**

## GREENMONT ON HUDSON

ESTABLISHED 1880 BY DR PARSONS

For special care and treatment of Nervous and Mental disorders Convalescents, and selected cases of Alcoholism. Unusual home-like atmosphere. State licensed. Moderate rates 45 minutes from New York City

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 Licensed by the Department of Mental Hygiene Emphasizing diagnosis and treatment of Neuro-psychiatric cases  
 In addition to the usual forms of treatment (occupational therapy physiotherapy outdoor exercise, etc) we specialize in more specific techniques. Insulin, Metrazol and Electro shock Psychological and physiological studies Psychoanalytic approach.  
**DR. JOSEPH EPSTEIN** Physician-in-Charge  
**Dr. Barnett Rosenblum** Resident Tel KATONAH 775  
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## WEST HILL

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For nervous mental, drug and alcoholic patients. The sanitarium is beautifully located in a private park of ten acres Attractive cottages scientifically air-conditioned. Modern facilities for shock treatment. Occupational therapy and recreational activities. Doctors may direct the treatment. Rates and illustrated booklet gladly sent on request.

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Cuts short the period of illness relieves the distressing cough and gives the child rest and sleep Also valuable in other PERSISTENT COUGHS and in BRONCHITIS and BRONCHIAL ASTHMA. In four-ounce original bottles. A teaspoonful every 3 to 4 hours.

**GOLD PHARMACAL CO., New York**

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University Hospital of the Good Shepherd, Syracuse, is undergoing extensive renovation.

## KEEP ON PITCHING

"Keep on pitching, doctor!" exclaims the editor of the *Kansas City Medical Journal*, Dr. E. H. Skinner. "There are nine innings to every ball game," he reminds us. "This old world has seen a lot of battles. And it just keeps on turning around. The sun still has a chance to shine every day. There have been a lot of pestilences that have taken more people than battles. Thanks to doctors, pestilences are no more. Possibly we should try a little medical research upon war or upon ruthless maniacs who are deluded with the idea that power and force are commendable items of human behaviorism."

"This European cataclysm makes a lot of our individual, and even governmental interests look very small and immaterial in comparison. But there are reasons why we should not give up any of our objectives. We are going to have to give up a lot of things but let us hang on to our priceless heritage of Freedom just as long as we live. Our forefathers fought for the priceless heritages of our democracy and plenty of them died for their ideals. This world situation has not yet reached any such tragic outlook but we are going to have to sacrifice so many of our worldly and comfortable conveniences that a lot of weak sissies are going to feel you are taking their life's blood."

"It would not be surprising if the politicians took advantage of the present emergency to try to regiment the medical profession as a defense measure. You must keep on pitching, doctor, for these politicians are wise boys and they know how susceptible your clientele is to that old emotional appeal for something more for nothing. We are going to have to give and give up. But we must keep up our courage and our freedom and our priceless heritage of democratic ideals."

"Doctor, you will never get a chance at another game as fine as it is played in America. So, keep on pitching, doctor!"

## DIAGNOSIS—LAZY FEMALE

*He said—sweetly*  
Your nerves are slightly out of kilter  
Your liver's just a little off  
If you'll go home and get some rest  
Your head upon a pillow, soft  
And every hour chew one of these  
I think that they should stop that pain  
But if they don't just call again

### *He thought*

Boy, but I could go to work on you  
I'd have you scrub your face first thing  
Fat old hen, all painted up, you look like mud  
And every morning bright and early  
I'd walk you forty blocks, old girlie  
And feed you spinach, squash, and lettuce  
Your hide, gee, what an awful mess that is  
I'd put a corset on you honey  
For when you walk, you shake so funny  
Take off those shoes—for love of heaven  
She's got size 4's, they should be seven  
In fact I'd do a lot for you  
If you would only let me  
But if I told you what I thought  
Nobody'd have to bet me  
That you'd go see Doc Jones instead  
And pay him to put you to bed,  
And as you're going to pay somebody  
It might just as well be me

—Ruth Elliott in *Utica Academy of Medicine Bulletin*

## NO WISH TO SEEM QUEER

"You inherited quite a nice little fortune," said the doctor.

"Yes," replied the fortunate youth.

"I suppose you will pay a lot of your debt now?"

"I had thought of it, but I concluded to make no change in my manner of living. I don't want to be accused of vulgar display."—*Case and Comment*

Mr. Haveadrunk is being examined by his physician.

Dr. Sorry: "I can't find any cause for your troubles. I think it's due to drinking."

Patient: "Well, maybe I had better come some time when you are sober."—*Med. Record*

How eye accidents are prevented in industry, through education of workmen and the use of goggles, masks, and other protective equipment, is dramatically portrayed in *The Eyes Have It*, a new sound slidefilm sponsored by the National Society for the Prevention of Blindness.

# A Guide to Select Schools



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See page 305

## What is the Physicians' Home?

The Physicians' Home is not an academic experiment. It is a reality. It concerns itself with the future and old age of human beings,—members of our profession. The Physicians' Home provides a home and maintains comfortable standards of living for its guests.

The validity of our worthy charity is not to be looked for in stone, but in the actual benefits now utilized by members of our own profession. It is a challenge to all of us to accept the responsibility for helping those less fortunate than ourselves. Please cooperate.

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# Public Health News

## Sulfapyridine to Be Distributed by New York State Department of Health for the Treatment of Pneumococcic Infections

**EFFECTIVE** January 23, 1941, the New York State Department of Health will distribute sulfapyridine for the use of registered doctors of medicine and hospitals in the treatment of pneumococcic infections in *patients for whom the purchase of the drug would prove a hardship*. Packages of 50 tablets (0.5 Gm each) may be obtained upon request from certain of the regular laboratory supply stations. A list of the supply stations designated for this purpose will be provided each physician through a memorandum from the District State Health Officer in his area.

The drug will be dispensed in bottles bearing the manufacturer's label in a form which may be detached, leaving on the package as it finally reaches the patient, a partially blank label upon which the physician may write his instructions. The label will, however, carry an identifying number which will not be intelligible to the patient. It is recommended that the manufacturer's label, bearing the name of the drug, be detached in order to discourage the possibility of self-medication should any of the drug be left after treatment of the case for which it was prescribed.

### How to Obtain the Drug

In order to obtain the drug the physician should sign a request slip similar to that now used for antipneumococcus serum, or should submit a signed letter of request containing the name and address of the patient, date of onset, bacteriologic findings, and place of examination, if done, or he should provide the laboratory custodian with such information if the request is telephoned. This information must be supplied for each package withdrawn.

The drug so distributed is intended for the treatment of pneumococcic infections only. However, prior sputum typing or other identifying bacteriologic examinations will not be required. Such examination, nevertheless, is still recommended as an essential of good practice. Certification of relief status or medical indigency will not be required but physicians are requested to cooperate in limiting their requests in order that the supply may be conserved for those who most need it.

In instances where the physician or hospital institutes sulfapyridine treatment and temporarily supplies the drug from a private stock, such private stock may be replenished in an equivalent amount from the supply subsequently withdrawn in the name of the patient.

### Record of Treatment

For sound administrative practice in the distribution of this drug as well as the continued production and distribution of antipneumococcus serums, brief clinical reports on the character of the case and the response to the therapy given are essential. In order to bring about the greatest simplification, the serum report form previously used has been entirely revised, the questions reduced to a minimum, and a section added for use in cases receiving chemotherapy. This new form (7-f) will, therefore, serve for cases receiving State distributed serum, State distributed drug, or both.

Upon completion of treatment, the record form (7-f) should be returned to the District State Health Officer within whose district the case resides or, in accordance with instructions from the District State Health Officer, to the County or City Health Officer in certain instances. This represents a change from previous practice with serum reports in which the forms have usually been sent directly to the Division of Laboratories and Research of the State Department of Health in Albany.

### Sulfathiazole

It is expected that a similar plan for the distribution of sulfathiazole will be undertaken as soon as this drug has been accepted by the Council on Pharmacy and Chemistry of the American Medical Association.

# NEW YORK STATE JOURNAL OF MEDICINE

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## Editorial

### Elephant's Child

On July 15, 1940, in the military medicine number of the JOURNAL, we published an editorial on the subject of physicians' life insurance in war time. The editors' purpose was to provoke discussion of this moot subject so vital to the welfare of those medical men and women who were about to enter the military and naval services.

At the time that this editorial was published, very little information was to be had as to the probable effect of our peacetime training mobilization on the existing structure of physicians' insurance contracts. We felt, however, that to raise the issues, which developed from questions being asked us by our correspondents, might in the course of time provoke authoritative information from some informed source. We also felt that being the first medical publication to print a military medicine issue, our role should be that of the elephant's child who, if you will remember, was "full of 'satable curiosity'." He asked his broad aunt, the Hippopotamus, why her eyes were red, and his broad aunt, the Hippopotamus, spanked him with her broad, broad hoof, and he asked his hairy uncle, the Baboon, why melons tasted just so, and his hairy uncle, the Baboon, spanked him with his hairy, hairy paw. And still he was full of 'satable curiosity'. He asked questions about everything that he saw, or heard, or felt, or smelt, or touched, and all his uncles and his aunts spanked him. And

still he was full of 'satable curiosity!'"\*

Well, *in loco parentis*, the *Connecticut State Medical Journal* spansk us again editorially in its January, 1941, issue, to wit:

"The New York State Journal of Medicine has recently given prominence to the discussion of the physician's life insurance in war time. In order to intercept any false interpretations or deductions a clarification of the subject is imperative. The voice of experience and, may we add, of authority, which the New York editor is pleased to ascribe to us, should logically come from Hartford, the insurance center of the nation. The payment of all types of insurance premiums becomes a serious problem for either physician or layman in the event of military service. Insurance carriers of accident and health policies are ruling that such policies shall continue in effect only provided that the insured remains within the United States or Canada, that he does not enter the air service, and provided that this nation does not engage in actual warfare. Life insurance is, of course, only one of the serious financial problems facing physician or layman who enters military service. He may be encumbered with mortgage payments on his home, monthly installments on his automobile or gas refrigerator, or interest on financial loans. The pay of a first lieutenant or of a captain will undoubtedly fall far short of the necessary income to meet these obligations.

"Our friends in New York commit a fundamental error when they reason that to borrow on a life insurance policy represents the insured's own money loaned back to him by the insurance company. A man does not borrow 'his own' money when he borrows on a policy, but, rather he enters into an agreement with the investment department of the insurance company whereby this same company agrees to invest some of its

\* Kipling, R. Just So Stories. Garden City Long Island, New York. Doubleday Page & Co. 1915.

# Woman's Auxiliary

To the Medical Society of the State of New York

APPROPRIATELY, once a year it seems wise to bring to the attention of our members through this page the importance of not only subscribing to but also the reading of medical literature. You have four publications for reading, reference, and study—the *Bulletin*—the publication of the Woman's Auxiliary to the Medical Society (see November 1 issue of the *JOURNAL*), *Hygeia*, the organization section of the *J. A. M. A.*, and this page in the *NEW YORK STATE JOURNAL OF MEDICINE*.

Our national president, Mrs. V. E. Holcombe, prepared by special request a splendid booklet called "Why read the *Bulletin*?" Excerpts are as follows: "Do you want to know more about the program of the Auxiliary and the working of each of the several Committees? Do you want to know why we promote the sale of *Hygeia*? Do you want to know why we feel it our duty and privilege to emphasize a Health Program, encourage a Public Relations and a Legislative Program? Do you want to know what the Auxiliary stands for? Why so many fine intelligent women are giving so much of their time to this organization? Why the doctors themselves encourage the growth and expansion of our activities? Read the *Bulletin*, the Auxiliary Digest. Become informed on the whole Program of the Woman's Auxiliary to the American Medical Association and its component Auxiliaries."

The *Bulletin* is our medium of information. The members should read it because it conveys to them knowledge of what other members are doing. They may read that there are others who have problems, and the way they were solved. A tie of interest and understanding is formed through the channels of information concerning each other. The *Bulletin* gives the main facts about the activities in which our organization is engaged, and the progress thereof. It presents the essential features of what is transpiring.

We feel that you and all readers will be amply repaid by having firsthand knowledge of the doings of the finest profession in the world and its Auxiliary. With this information and inspiration we feel that we shall all be more worthy members of the Woman's Auxiliary to the American Medical Association." Our quota for New York State is 350 subscribers, to date we have 84. Subscriptions may start any time. *Is yours in?*

Mrs. Joseph P. Lasko, our state chairman, writes: "What do you do with your *Hygeia*'s?"

"When this month's *Hygeia* arrives place last month's on your private desk. If you have any extra sample copies, do the same with them. In the course of your treatments your patient may want something to read—hand him *Hygeia*. Or, while you are sterilizing a 'Hypo' or instruments he will pick it up and glance through it. As he walks out hand it to him to take home. Surely he will not read it through in your office. And, in what better way could you get it to the rest of his family? The layman thirsts for medical knowledge. He will read every medical article in the papers, why not in *Hygeia*? He will. Once he finds out where he can get good everyday horsensense he will come back for more. Is it not also possible that brother Bill, of draft age, may be interested in last November's 'Aviation Medicine'? If young Jack sees those football players, will he throw it aside? Not on your life! Where could he get a better argument to show mother? And, incidentally, is it not quite possible that mother will bring Jack over to see you to find out whether or not he is physically fit for the game? If you do not read *Hygeia* yourself, glance through the index. You will notice the article on 'Teeth.' Only last week Mrs. Jones was in to consult you about her child's teeth. Have your secretary wrap up the November issue, put a three-cent stamp on it and mail it to her. She will appreciate it. First, however, in ink, write the number of the page on the cover and underline it. At the bottom write 'You may subscribe through your local Woman's Medical Auxiliary.'"

## Attention Auxiliary Members!

"Where is the Annual State convention to be held?" Headquarters at the Hotel Statler, Buffalo, New York. "When?" April 23 to May 1, 1941, inclusive. "Who is Convention Chairman?" Mrs. Carlton E. Wertz. Any information may be obtained from her at 95 Parker Avenue, Buffalo, New York. Mark the time and place on your calendar at once. Everyone needs a vacation and a change at this time. Buffalo with its romantic associations offers much to the busy doctor and his wife. This famous city is boasting of a brand new Convention Hall and new Music Hall. Each issue of the *JOURNAL* will contain added news. Be sure to watch our page for the attractions to be afforded the Woman's Auxiliary by Mrs. C. Wertz and a committee.

## UP AND ATOM!

Someone has written: "The structure of a molecule seems to the average man to be of little importance in its relationship to the saving of human life. When, however, a chemist moves one of the components of a molecule from one point in its structure to another, and thereby develops a drug with specific virtues against a disease that has devastated man for the last four centuries, the interior elements of a molecule then become of considerable interest."—Quoted in the *Journal of the Tennessee Medical Association*.

## TO PROVIDE FOR THEIR NEEDY

The Illinois State Medical Society has established a Benevolent Fund to provide for needy members or their widows or widowers and to be administered by a Committee on Medical Benevolence. One dollar a year will be paid into the fund from the dues of each member, and those in need will receive "regular" monthly benefits not to exceed \$25 to \$30 per month in any one case." The Illinois plan closely resembles the one which has been operating in Pennsylvania for thirty-seven years.

cannot make the prepayments called for, which means that the vital problem of widely distributing medical care is not touched. The patient who can prepay must choose a (participating) doctor, though that doctor may not have the privileges of a good voluntary hospital

The *Times*, we feel, is perhaps a little oversentimental and under-informed in stating that "the vital problem of widely distributing medical care is not touched

" at least in the State of New York. The problem admittedly has difficulties, all of which are not to be solved by prepaid medical expense insurance. "Families that must live on \$1,000 a year or less" and "cannot make the prepayments called for" appear to the *Times* to be beyond the reach of widely distributed medical care, if we understand correctly the printed word

We are glad that the *Times* has brought this matter to light. For some time there has been on the statute books of this state—Public Welfare Law Article X, section 83—a statement of the responsi-

bility of public authority for providing medical care. We quote

The public welfare district shall be responsible for providing necessary medical care for all persons under its care, and for such persons otherwise able to maintain themselves, who are unable to secure necessary medical care, except insofar as, in cases of communicable disease, that duty may be imposed upon the health officer by law or the state sanitary code. Such care may be given in dispensaries, hospitals, the person's home or other suitable place

Perhaps this is news to the *Times*, perhaps not. At any rate medical care, the *Times* will note, will be provided for "persons otherwise able to maintain themselves," by a beneficent state government. Surely the persons "that must live on \$1,000 a year or less" would fall into the category of persons otherwise able to maintain themselves but who are unable to secure necessary medical care? In that case why these tears? Can the *Times* be seriously questioning the good faith of the state government? Tsk! Tsk!

## Socialism vs. Sociability

How social is socialism? The obvious answer seems to be about as companionable as the socialists! In the recent past, socialism was perhaps farthest advanced in Germany, Austria, the Irish Free State, and the Scandinavian countries. In 1936 France came under the control of a socialist government for better or worse and Spain overthrew its semisocialist government in favor of fascism.

Somehow the cooperative movement among peoples seems to revert to the old-fashioned practice of blood-letting as a cure-all, a practice discarded as inefficient, ineffective, and outmoded years ago by the medical profession. Hence it has been with some misgivings perhaps that physicians have watched the carefully fostered growth of socialism in this country. For physicians are really very sociable people. They get around among the folks quite a lot.

Among the people of this democracy the physicians circulate—among the friendly, sociable people riding in automobiles, laughing, dancing, going to church, voting in free elections, eating butter, drinking beer, arguing about any and everything under the sun, listening to radios, attending prize fights, working to produce useful and beautiful things, living together in sociability. Among these people physicians move yet awhile.

And in their hearts they wonder about this thing called socialism, this cooperative movement which has produced all the fine things of life in modern Europe, the fine burning of books, the magnificent bombings of Ethiopians, the exquisite torturing and murder of Jews, the elegant collapse of France, the splendid civil war in Spain, the sublime demolition of architectural landmarks in Britain, the

money with him, provided he pays interest for the use of it. This process is entirely comparable to the investment of money by the life insurance company in real estate and in investment securities, but in any event the company must realize a return on money invested in order to maintain solvency. Borrowing money from an insurance company by an individual is no different from borrowing money from a bank. In the second instance the bank requires collateral of securities, or other tangibles, while the insurance company accepts a life insurance policy as collateral up to the amount of reserve which has accrued against the policy.

"Automatic extension of insurance at the face value of the policy for a period dependent upon the amount of cash reserve in the policy has been suggested as a solution of the physician's difficulties in meeting premium payments. The question is, why limit the moratorium to life and accident premiums? It could as fairly be applied to any current debt or obligation incurred by any individual who may become a part of the fighting forces of the United States. What would be the result upon the economic system if such a procedure became legalized? Let us not forget that a life insurance policy may be paid for in full if the insured so desires. Furthermore, if a continuation of the payment of life insurance premiums is not desired for any policy, the insured is protected through paid-up insurance for 100% value of all premiums paid up to the time of the cessation of premium payments and, therefore, no further premium payments need be paid.

"Our neighbors from New York, 'to provoke discussion of this subject,' have suggested a transfer of insurance from private to government control. This invites the entrance of the government into the field of insurance. During World War I the government sold cigarettes at seven cents a package at army posts, while the same product was sold elsewhere at fifteen cents a package. How was the difference in selling price made up? How will the difference between the premium charged for government insurance and the actual cost of the insurance to

the government be met? The answer, obviously, is by taxation toward which everyone contributes. How far do we wish to permit the government to be projected into private enterprise? If it is going into business at all, why not into all fields? Can the government handle any business as efficiently as is possible under good private management? How great a degree of efficiency in business may one expect from the government when the results of lack of efficiency, lack of judgment, lack of foresightedness, and lack of honest endeavor can always be compensated for by an increase in taxes? Will the change of operating personnel under government control due to the change in administrations tend to keep the level of efficiency as high as under private enterprise?

"It requires no deep study on the part of well informed citizens to realize the repercussions of the T V A experiment where taxation is concerned. Private enterprise is based on the premise, 'he successful or you perish,' and that is an impelling incentive for the achievement of success. Such an incentive would be non-existent under government control. Government securities do not in themselves yield sufficient income to insure the solvency of any insurance organization. The government itself can make up this deficiency only by increased taxation, but the source of supply will fail if business is choked by a moratorium and the natural flow of money necessary to carry on all business is thereby reduced.

"There is most assuredly no novel or magic way of providing for life insurance premiums of those engaged in the business of military training. The mysteries of the Aladdin-like legerdemain performances in Washington have long since been divulged. Financial obligations, including life insurance premiums, cannot be suspended nor can protection exist for the physician insofar as he pays for it. The hard way remains the only way for us, as for countless others in the disrupted world of today."

And *still* we are full of 'satable curiosity!'

## The Medically Indigent

We are indebted to *Medical Economics*<sup>1</sup> for the following contribution to the matter of prepayment plans for medical service:

The Bronx County (N Y) Medical Bulletin points out that premiums for sickness insurance are so steep as to be suited only to those in high income groups. "Organized medicine is not interested in establishing voluntary in-

urance plans for the high income brackets," the Bulletin declares. "This class of patients is financially capable of paying for medical service and is the backbone of present medical practice. Why organize insurance plans jeopardizing the little practice still left with us?"

To which the *New York Times*, in a recent editorial, adds

Families that must live on \$1,000 a year or less cannot be reached because they

<sup>1</sup>Medical Economics 18 110, No 4 (Jan.) 1941

## Correspondence

## "HEALTH INSURANCE" VERSUS "SICKNESS INSURANCE"

*This controversy began with the publishing of Dr Haven Emerson's letter in the January 1 issue—Editor*

January 17, 1941

To the Editor

The term "Health Insurance" has been challenged as fallacious and misleading. In order that there be no misunderstanding as to the intent and meaning of the phrase, we should properly investigate its use and definition and compare it with the proposed term "Sickness Insurance."

1 In the first place "Health Insurance" is used in the same sense as "Life Insurance," which surely does not guarantee life, but does insure payment of certain sums when death occurs. In the same way "Health Insurance" makes no guarantee for health but promises certain services or payment should illness occur.

2 In the second place, it is hoped that group insurance will make the path easier to the physician's door. When preventive medicine can be more readily received, and when periodic physical examinations and prompt treatment when needed are the order of the day, can there be much question that the insured group will enjoy better health than a similar uninsured group?

3 Third and last, it is more worthy to use a positive rather than a negative term. Health may be good or bad. As defined by Funk and Wagnall's dictionary, health means "soundness of any living organism, also physical condition, good or ill." Also, "Health Insurance" is listed in standard dictionaries, but nowhere is there a definition or listing of "Sickness Insurance."

The *Quarterly Cumulative Index Medicus* from Vol. I (1927) to Vol. 27 (1940) has under the heading of "Insurance," Accident, Health, Life (and occasionally Social, Physicians', and Fire). "Insurance, Sickness" appears never to be used at all by the Index, but "Insurance, Health" is by far its largest category under Insurance.

Therefore, by definition, meaning, and common usage, the term "Health Insurance" is accurate, honest, and legitimate.

Very truly yours,

ELINOR B HARVEY

DONALD K FREEDMAN

January 20, 1941

To the Editor

Inexact terms and lack of definitions are common causes of profitless controversy and confusion of thought. If the medical profession is to continue to deal honestly within its own ranks and with the public, it will wish to use terms that are neither ambiguous nor deceptive.

There is much to be said in favor of insurance to meet the cost of medical care in sickness especially if on a voluntary basis. If such insurance is sold to the public as "Health Insurance" the insured will expect health which cannot be promised or paid for on any basis so far undertaken. The first step toward useful discussion is a correct use of terms.

1 Fire Insurance, Accident Insurance, Burglary Insurance, Sickness Insurance are terms implying financial protection against the costs of the hazard named.

Life insurance is an investment in benefits to others than the insured person, who pays for them during his life.

Sickness insurance, a term correctly describing systems, voluntary and compulsory, in effect in continental Europe at least since Bismarck's time, was replaced in England for political persuasiveness by Lloyd George about 1912 to obtain support for his compulsory participating plan for medical care for wage earners. The term "Health Insurance" is widely used in this country for the same purpose. Neither the purpose, which is to persuade people to vote for something they will not in fact receive, nor the term itself as descriptive of the purpose for which the insurance fund is created justifies our use of the phrase "Health Insurance" in medical discussions among ourselves or with the laity, except to warn against its incorrect and unpredictable implications.

2 Group or individual insurance to meet the cost of periodic medical or health examinations or examinations for diagnosis and early treatment of "pre-clinical" states of disease may or may not contribute to the health of the individual, according to the patient's understanding and cooperative ambition to achieve, maintain, or improve his health. This cannot be insured either for or against. This is not included among compulsory "Health Insurance" benefits in England. There is no evidence in this country or abroad that insurance schemes to meet the cost of care in sickness have been an important factor in the health status of the people generally or of the insured group. Nor has the misnamed "Health Insurance" scheme in England brought to the insured a superior or adequate quality and range of medical care in sickness.

3 Sickness insurance will win its way into dictionaries and ultimately in the *Index Medicus* when it is clearly understood to describe something definite, exact, correct as defined, and quite different from "Health Insurance" as intended by its current promoters.

Whatever our language or national inclinations or traditions, we must admit that *Krankheit Versicherung* has the precise meaning of sickness insurance. *Gesundheit Versicherung* is something different and nonexistent. The British adopted a new name for an old thing without altering its essence or quality.

There are no health services offered or provided for under the "Health Insurance" scheme in England. Insurance is not paid when health is lost. The cost of sickness is paid for. The insured determines when he or she is sick and demands attention. The insured have no investment in health and their insurance does not give them any better health.

Very truly yours,

HAVEN EMERSON, M D

esthetic conscription of labor, the graceful starvation of human beings, the imposing exile of human herds, the superb walling-in of the "begats" of Abraham

And in their minds they ponder about this thing called socialism, this cooperative movement in this hemisphere which commences now to produce many things in America. Social Security, and guns and tanks, compulsory sickness insurance, and men marching in uniform in

peacetime, and debt, and warplanes, the socialization of medicine, and warships, torpedoes, bombs, and lease-lend bills and taxes for the happy folk to pay so that they can be more expeditiously socialized in the shadow of democracy

How social is socialism? Your guess is as good as ours. You have eyes to see and ears to hear with. Look in the open book of history, listen, and you will hear the dull tramp of marching feet

## Hearing Aids

About five million people in the United States are so hard of hearing as to require some sort of hearing aid. Their problems in this respect are discussed elsewhere in this issue by Dr. Thomas H. Halsted, F.A.C.S., emeritus professor of otolaryngology, Syracuse University College of Medicine, now resident in New York City.

For the first time, we are informed, there is now established here a means whereby the hard of hearing may be advised by competent medical authority and scientific individual adaptation may be made of the various hearing aids. Formerly, advice on these matters has been largely a service rendered to patients by manufacturers' representatives and such of the laity as considered themselves to be competent advisers

by virtue of using some mechanism themselves.

The science of acoustics has made such rapid strides in recent years that it has become increasingly impractical for many medical men to devote their entire time to the study of the physical, electrical, and chemical technology which has entered into the production, operation, and adaptation of the many devices now on the market.

When, as in Dr. Halsted's case, a medical man can make available to the hard of hearing a consultative service based on this wide study of apparatus plus a physician's knowledge of the anatomy, pathology, and physiology of the ear, we believe that again a definite advance has been made in the public service rendered by the medical profession.

### "Shuffle off to Buffalo"

is the tune we recommend for the latter part of April, for, on the twenty-eighth, the 1941 Annual Meeting of the Medical Society of the State of New York will convene there. The dates are from April 28 through May 1. The headquarters will be at the Hotel Statler and you are urged to make your reservations now.

The scientific program will be particularly outstanding this year and we hear that the banquet is to be an occasion that no Society member will want to miss.

Start "shuffling" your spring dates now so that you will be in Buffalo on April 28.

# ARSENIC AS A POSSIBLE CAUSE OF SUBACUTE ENCEPHALOMYELITIS

## A Correlation of Chemical, Clinical, and Histologic Observations

ARTHUR D. ECKER, M D , Ph D (Neur ), Syracuse, New York

THE present study resulted from the observation that the clinical course in cases of subacute, fatal encephalomyelitis frequently seems attributable to the continuous action of some toxic agent. Considerable amounts of arsenic were found in the brain in most instances in which that tissue was available. It is proposed in this study to consider the possible significance of these facts by correlating the clinical, pathologic, and chemical features in these cases.

### Review of Literature

Under modern conditions there is the growing likelihood that large numbers of people exposed continuously to arsenic from a multitude of legitimate everyday sources may be slowly poisoned through its cumulative effects.<sup>1-4</sup> Therefore, one must necessarily agree with the statement<sup>4</sup> that, confronted with an individual sufferer in a complicated and irresponsible society, the detection and control of intake of arsenic are perhaps impossible at present. Furthermore, under living conditions of the present day it is probably impossible to remove a patient from all contacts with arsenic.<sup>2</sup>

It is not generally recognized that in chronic arsenical poisoning there is frequent evidence of involvement of the brain. However, a review of the European<sup>5-10</sup> and American<sup>11-14</sup> literature on the subject of arsenism shows that cerebral signs not only are present but also are often the leading clinical features of the disease. These symptoms are primarily headache and fatigue, both bodily and intellectual. This clinical picture is not unlike neurasthenia.<sup>6</sup> However, additional symptoms that may be present include dizziness, restlessness, excitability, or mental dullness. It is, therefore, beyond question that chronic arsenical poisoning is manifested frequently by cerebral symptoms. Unfortunately, in none of the preceding reports of such cases was microscopic study of the brain reported.

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For over one hundred years<sup>15-19</sup> there has been continual dispute as to whether or not arsenic is a normal constituent of the human body. However, the opinion of the majority of modern toxicologists<sup>20-22</sup> is epitomized by Kunkel<sup>23</sup> who stated that so-called normal arsenic, if it exists at all, is so extraordinarily small in amount (hundredths or even thousandths of a milligram in an entire organ) that it is not of forensic significance, whereas quantities a hundred or a thousand times larger are of significance.

In cases of chronic poisoning from a single large dose of an inorganic arsenical compound, the central nervous system, as well as the long bones and the hair, contains more arsenic than the so-called primary depots—the gastrointestinal canal and liver.<sup>24,25</sup> The relative arsenical content of the various organs in a case in which inorganic arsenic is received continuously or intermittently until death occurs lies somewhere between that associated with acute poisoning and that associated with chronic poisoning following a single large dose.<sup>26,6</sup>

However, following the continued administration of the organic compounds of arsenic (specifically, arsphenamine and its derivatives), amounts less than 0.1 mg. of arsenic per hundred grams of fresh tissue are generally to be found in the brain.<sup>27-32</sup> The major group of cases which are exceptions to this general rule is represented by the cases of so-called hemorrhagic encephalitis.<sup>31</sup>

The pharmacodynamic effects of the trivalent compounds of arsenic, both inorganic and organic, include direct interference with the oxidation of tissues in general,<sup>33-35</sup> and widespread paralysis of arterioles, capillaries, and venules.<sup>35-37</sup> This vasomotor paralysis subsequently aggravates the embarrassment of tissue respiration.

The effects on the brain and spinal cord of arsenical compounds of all three groups, inorganic,<sup>43-45</sup> organic pentavalent,<sup>44-46</sup> organic trivalent,<sup>47-52</sup> are identical. These effects are what might have been expected on the basis of the pharmacodynamic effect of these compounds. The primary interference with tissue oxidation is marked by nonspecific

## ERRATA

### Workmen's Compensation

In the February 1, 1941, issue of the JOURNAL there appeared on page 259 two errors which need correction

In the second paragraph, line 1 should read "It should be noted that the C-4 report must," etc, instead of C-14

In the third paragraph, line 4 should read "The law states that the C-14 report," etc, instead of C-4

The corrected report is published below

February 5, 1941

DAVID J. KALISKI, M D  
*Director*

### WORKMEN'S COMPENSATION

We have been informed by the Director of Workmen's Compensation of the Department of Labor that many physicians throughout the state are not yet familiar with the amendments to the Workmen's Compensation Law which became effective on July 1, 1940. These were published in the NEW YORK STATE JOURNAL OF MEDICINE, June 1, 1940. The attention of physicians practicing under the Workmen's Compensation Law is again directed to these amendments, and they are urged to comply with them.

It should be noted that the C-4 report must now be forwarded to the employer or insurance carrier and the Department of Labor, within fifteen days instead of twenty days as heretofore. This report should be notarized, but physicians are urged not to delay it if a notary is not available. The C-104 form is reportable within forty-eight hours.

The new progress report (C-14) should be sent to the employer or insurance carrier and the Department of Labor in all protracted cases every three weeks. The Law states that the C-14 report should be submitted "when requested" by the employer or insurance carrier, but it is advisable to submit such reports, even though not

requested, at regular intervals, in order to familiarize the employer or insurance carrier with the progress of the patient if the medical care continues beyond the first four weeks or so.

Another amendment, effective July 1, 1940, gives to the Industrial Board the right to assess the cost of medical care against a noninsured employer. Physicians treating claimants whose employers fail to carry insurance should submit bills for medical service directly to the Department of Labor, care of the Industrial Board, 80 Centre Street, New York City, and send a copy of the correspondence and bill to this office.

Workmen's compensation committees or boards throughout the state are urged to bring the above changes to the attention of physicians at the regular meetings of the county societies and by publication in local bulletins.

The various forms (C-104, C-4, C-5, C-14, C-27) are available on application to the local county society office. Forms are obtainable by the societies upon application to the Department of Labor, Albany and New York offices. Physicians should not apply directly to the Department of Labor for blank forms.—David J. Kaliski, M D, Director

clusive (Tables 1 and 2), therefore, represent instances of known arsenical poisoning

Subsequently, a large miscellaneous group of cases listed in the neuropathologic files available under the heading of "Encephalitis" was considered. First, the brain tissues that had been preserved in formalin were tested for the presence of arsenic, and the finding of 0.1 mg. of arsenic per hundred grams of tissue was considered significant. Instances in which the brain contained such amounts were designated positive cases. Other instances in which less than this amount of arsenic was present were called negative or control cases (Cases 14 to 37). After the presence or absence of arsenic had been determined, the clinical records were studied for evidence of the presence of syphilis. In the event that there was any clinical evidence of syphilis the case was withdrawn from our consideration in order to avoid unnecessary confusion. The prevalence of the use of arsenical compounds in the treatment of syphilis would interfere with proper interpretation of the chemical findings, and the possible presence of syphilitic meningoencephalitis might complicate the interpretation of the neuropathologic findings. The remaining positive cases constitute Cases 44 to 55, inclusive (Tables 3 and 4), in our series and represent the main object of this study.

**Chemical Methods**—For determining the presence of arsenic in the brain and liver, Osterberg's<sup>100</sup> modification of the electrolytic Gutzeit apparatus was used. Five grams of tissue were used in all of the determinations on brain and in all except two or three of the determinations on liver in which only smaller amounts of tissue were available.

It was important to determine whether the arsenic in the brain might have resulted from embalming fluids. Accordingly, samples of the eight embalming fluids used by all the undertakers who embalmed the brains in these cases were tested for their content of arsenic. One specimen did not contain arsenic. In 1 case, there was 0.02 mg. of arsenic per hundred cubic centimeters, in 4 cases, 0.04 mg. per hundred cubic centimeters, and in 2 cases, 0.4 mg. per hundred cubic centimeters. If the maximal concentration found in these cases had been used—that is, a solution containing 0.4 mg. of arsenic per hundred cubic centimeters of embalming fluid—and if 1,000 cc. of the fluid had been injected, 4 mg. of arsenic would have been injected. It is hardly conceivable that all this arsenic would have remained in the body, because several washings of extremely dilute fluid are used

TABLE 2—CASES OF SO-CALLED HEMORRHAGIC ENCEPHALITIS

Case	Sex	Age Years	Survival After Onset of Symptoms Days	Mg. of Arsenic per 100 Gm.— Brain	— Liver
8	M	40	1	0.18	Nil
9	F	32	4	0.12	0.125
10	F	36	5	0.20	Nil
11	M	32	Few	0.10	0.10
12	F	41	6	0.20	Nil
13	M	29	8	0.12	0.135

The average dilution of embalming fluid is twelve parts of water to one part of fluid. But even if all the arsenic were deposited in the body, it is altogether unreasonable to suppose that 37 per cent of the arsenic would remain in the brain, and this percentage would represent the smallest positive figure—namely, 0.1 mg. per hundred grams of brain tissue. In many of the significant cases (namely, Cases 1, 3, 5, 40, and 42) embalming was not done.

If the brains had not been embalmed before removal, formalin was injected into the circle of Willis in the laboratory. In any event, the brains were stored in a solution of 4 per cent formalin. Accordingly, chemical analysis of the formalin used in the laboratory was made and arsenic was not found. The fact that arsenic when found in the tissues could not have been the result of contamination by either the embalming fluids or the formalin used in preserving the tissues is amply demonstrated by the large series of control cases (14 to 43, inclusive) in most of which embalming had been performed before autopsy.

Although it is a matter of lesser importance, it was interesting to determine whether arsenic was leached out of the tissues by the formalin in which the organ was preserved. That this did occur is shown by a few cases in which the original arsenical content of unembalmed tissue was found to be several times that of the same tissue after prolonged fixation in formalin. In these cases arsenic could be recovered from the formalin provided that the brain was kept in an individual container.

However, in many instances an equilibrium was set up between the amount of arsenic in the brain and that in the fluid in which it was preserved. In these cases repeated determinations of arsenic over a period of five years yielded almost identical results (provided that the same region of the brain was used). The difference in results was usually less than 0.06 mg. per hundred grams of tissue, and the lower content of arsenic resulted from the more recent determination.

However, if a brain that has been kept in an

TABLE 1—ACUTE FATAL POISONING WITH INORGANIC ARSENICAL COMPOUNDS

Case	Sex	Age, Years	Survival After Onset of Symptoms	Mg of Arsenic per 100 Gm	
				Brain	Liver
1	M	4	10 hr	0.08	0.66*
2	F	50	7 hr	0.12	1.02*
3	M	4	24 hr	0.37	0.138*
4	M	45	24 hr	0.25	1.00*
5	F	1	4 days	Trace	1.7
6	M	7	5 days	0.05	0.10
7	M	41	8 days	0.10	Nil

\* Arsenic was found also in the gastric contents

changes in the bodies of the nerve cells. The vasomotor paralysis leads primarily to engorgement of the smaller vessels and to edema of the central nervous system. Subsequent fatty degeneration of the endothelium of these vessels leads to the formation of thrombi and perivascular changes—namely, necrosis, gliosis, and hemorrhages. Emboli, perhaps consisting of Voegtlin's protein-arsphenamine precipitate,<sup>84</sup> may play a role.

Finally, if the individual survives three or four days, mesodermal elements (at first polymorphonuclear cells) infiltrate the regions of perivascular necrosis. Later, the walls of the vessels become hyalinized, and those mesodermal elements associated with chronic inflammation (lymphocytes and plasma cells) appear in the form of perivascular cuffs—that is, an inflammatory reaction.

For many years neuropathologists attempted to draw a distinction between essential or primary inflammatory disease of the brain, on the one hand, and "inflammatory reactions" on the other. They felt that the first group of designations should be restricted "to inflammatory diseases of the brain of infectious origin, no matter whether or not the infectious agent is identified."<sup>85</sup> Although Jakob<sup>86</sup> stated that lymphocytic infiltration in cases of encephalomyelitis signifies the presence of bacterial infection and Pette<sup>87</sup> stated that it signified the presence of a virus infection, Spielmeyer<sup>88</sup> has clearly enunciated the nonspecificity of each of the components of the encephalitic reaction. He stated that,<sup>89</sup> if an injury induces a defensive reaction on the part of the living organism, the pathologic lesion in general is the same, regardless of the nature of the injurious agent visible or invisible germs, toxic infectious injury, exogenous poison, or even endogenous, metabolic, or destructive processes. The same mechanism of defense is put into action in any case. Spielmeyer's views, now widely accepted, may have evolved from those of Oppenheim and Cassirer<sup>90</sup> who stated that,

by and large, all agents that can damage the organism either through intoxication or infection can lead to severe alterations in the brain itself by way of the blood stream. The hematogenous character of the lesion can be seen in the changes that begin in the neighborhood of the blood vessels, especially near the small vessels. Recently, Globus<sup>91</sup> also pointed out the striking confluency of all the forms of encephalitis.

Before considering the question as to whether arsenic is the etiologic agent in any of our cases, it may be well to observe the effects that have resulted from the long-continued effect of other chemical substances. We now know that the encephalitic reactions are nonspecific and that typical inflammatory changes have been caused by the intracarotid injection of various agents.<sup>91</sup> Similar lesions have resulted from the experimental introduction of certain substances such as trypan blue into the spinal fluid or cerebral tissue.<sup>92</sup> Inflammatory cells have been reported in chronic poisoning from lead,<sup>93-95</sup> manganese,<sup>96</sup> cocaine,<sup>97</sup> cyanide,<sup>98</sup> carbon monoxide,<sup>99</sup> and mushrooms.<sup>99</sup>

In judging whether perivascular infiltration may result from exogenous toxins, the element of time must be considered. At least a few days are required for the development of such infiltration. Even after long-continued exposure to a poison, one cannot expect to find encephalitis unless there had been clinical evidence that the brain had been affected. With these two factors, apparently dissonant neuropathologic reports may be harmonized. From the evidence presented it is clear that "chemical encephalitis" is not rare.

### Material and Methods Used in the Present Study

**General Plan**—Three series of cases in which death was unquestionably attributable to arsenical poisoning were studied from the clinical, pathologic, and chemical points of view. Cases 1 to 4 (Table 1) represent instances in which a large dose of inorganic arsenic was ingested and in which death ensued within twenty-four hours. Cases 5, 6, and 7 (Table 1) represent instances in which death occurred within a period of a few days and in which significant amounts of arsenic were found in the viscera, even though arsenical poisoning had not been suspected clinically. Cases 8 to 13, inclusive (Table 2), represent instances of so-called hemorrhagic encephalitis in which appreciable amounts of arsenic were found in the brain. Cases 1 to 13, in-

TABLE 4.—MICROSCOPIC OBSERVATIONS IN CASES OF SUBACUTE ENCEPHALITIS WITH ARSENIC PRESENT IN THE BRAIN\*

	Case Number											
	44	45	46	47	48	49	50	51	52	53	54	55
Spinal fluid cells												
Small lymphocytes	41	1	1	53	57	1	5	41	248	2	3	90
Large lymphocytes	3							1	6			
Polymorphonuclears	2	9										
Erythrocytes			Few				Few				Few	1
Changes in nerve cells												
Chromatolysis	2	2	2	3	2	2	1	2	2	2	2	3
Pyknosis	0	3	0	0	0	0	0	0	0	0	1	0
Satellitosis	1	1	2	2	2	2	2	3	3	2	2	1
Interstitial cells												
Microglia	1	2	2	1	1	1	2	1	1	1	1	1
Oligodendroglia	3	3	3	3	3	3	4	2	4	4	3	3
Pervascular cells												
Endothelial	1	1	0	1	1	1	2	1	1	0	0	1
Lymphocytes	2	0	1	2	1	0	1	2	2	3	2	3
Plasma cells	2	0	1	2	3	1	0	3	2	1	2	2
Oligodendroglia	0	1	1	0	0	1	2	0	1	1	0	0
Edema												
Interstitial	2	3	3	3	2	3	2	2	2	3	2	2
Pervascular	0	1	1	2	0	1	0	1	2	2	0	0
Pericellular	0	1	0	1	0	1	0	1	2	1	0	0
Meninges												
Thickening	1	2	1	1	1	0	2	1	2	0	0	2
Lymphocytes	3	1	0	1	2	2	0	1	2	3	2	2
Plasma cells	3	0	0	1	2	0	1	1	1	1	2	1
Scavenger cells	1	2	0	1	1	0	1	2	2	0	0	1

\* Numbers of cells in the spinal fluid are given per cubic millimeter. The significance of the other numbers follow: 0 indicates normal or absence of abnormality; 1, 2, 3, 4 indicate degree of pathologic alteration or of increase in number of cells.

forms (Cases 1 to 4) to the acute forms of hemorrhagic encephalopathy (Cases 8 to 13, Table 2) and the subacute and chronic forms (Cases 44 to 55, Tables 3 and 4). As would be expected, the liver contains much more arsenic than the brain in most acute cases. The findings in Case 3 are exceptional because of the relatively low concentration of arsenic in the liver. The actual amount of arsenic in the brain is consistent with that in the other cases (Table 1).

### Cases of So-Called Hemorrhagic Encephalitis

The symptoms were typical and included headache, convulsions, coma, and focal signs. The pathologic findings were characteristic and included advanced cerebral edema, marked proliferation and acute swelling of oligodendroglia, and widespread hemorrhages. In all cases there were regions of necrosis and demyelination which Russell<sup>17</sup> has emphasized. In 4 of the 6 cases there was the beginning of perivascular infiltration. In 3 cases (9, 11, and 13) there was equal concentration of arsenic in the brain and liver, but in 2 cases (8 and 12) there was much more arsenic in the brain than in the liver (Table 2).

### Main Group of Controls

This series of cases (14 to 37) included many different types of encephalopathy from which only the syphilitic varieties were excluded. The patients ranged in age from less than 1

year to 60 years. There was some intracranial lesion in every case, and in many instances there was some other somatic disorder. Of the 24 brains there was no arsenic in 15 and from 0.02 to 0.05 mg per hundred grams of tissue in 9.

In Cases 31 and 32, lesions morphologically identical with those of our main series (Cases 44 to 55) were found. However, repeated examination of the brain revealed the absence of arsenic and apparently demonstrated that these morphologic changes are not specific, however, the arsenic may have been present formerly and may have been excreted before the patients died.

### Special Group of Controls

Since it might be thought that the arsenical compounds circulating through the body might tend to be deposited in a locus minoris resistentiae, we sought a special group of control cases of known etiology which were to resemble the cases of encephalitis in duration, symptoms, and pathologic findings. Therefore, from 16 instances of fatal, malignant hypertension in which the brain was available for study,<sup>104</sup> we selected those 6 cases in which perivascular "cuffing" (the landmark of encephalitis) with lymphocytes and plasma cells was most marked. Small hemorrhages and multiple infarcts were present in each case. The cellular infiltration was generally from one to three cells deep and was found usually in regions of necrosis. Adjacent to the

TABLE 3—SUBACUTE ENCEPHALITIS WITH ARSENIC PRESENT IN BRAIN, CLINICAL AND CHEMICAL FEATURES

Case	Sex	Age, Years	Clinical Diagnosis	Survival After Onset of Cerebral Symptoms	Mg of Arsenic (per 100 Gm. Brain Liver)
44	M	36	Diffuse encephalomyelitis	5 wk	0.30
45	M	1/2	Malnutrition cerebral edema?	16 days	0.30
46	F	53	Indeterminate psychosis	3 1/2-4 wk	0.80
47	M	36	Encephalitis	5 1/2 wk.	0.22
48	M	57	Encephalitis	2 mo	0.37
49	M	63	Arsenical poisoning	2 mo	0.35
50	M	65	Probably brain tumor of aqueduct or fourth ventricle	3 mo	0.40
51	M	37	Brain tumor of fourth ventricle	4 1/2 mo	0.17
52	M	30	Acute encephalomyelitis	6 1/2 mo	0.40
53	F	19	Subacute lethargic encephalitis	9 mo	0.20
54	F	14	Grand mal epilepsy, athetosis, mental deficiency	Few yr	0.83
55	M	53	Indeterminate psychosis	Few yr	0.10

individual jar for some time and has been proved repeatedly to contain an appreciable amount of arsenic is then placed in a large formalin-filled crock with many other brains, most of the arsenic may then be leached out of the brain tissue. This observation was made repeatedly.

Accordingly, all of the determinations made on brain tissues and recorded in this study have been made either on fresh tissue that has not been stored in formalin at all or on tissue from brains that were stored in small individual containers.

That arsenic is not always distributed homogeneously throughout the substance of the brain was pointed out first by Osterberg and Kernohan,<sup>31</sup> who found a greater concentration of arsenic in the white matter than in the gray matter of the brain in their 4 cases of pericapillary hemorrhage. Although in some cases of the present series, smaller amounts of arsenic were found in less severely damaged regions of the brain, if arsenic was present at all, it was always found in maximal concentration at the site of the greatest pathologic change. Whenever more than 0.1 mg of arsenic per hundred grams of brain tissue was found, there was profound histopathologic alteration.

The reliability of the method, apparatus, and reagents used is beyond question. They have been used in thousands of determinations in the routine work of the institution. Indeed, our own controls (Cases 14 to 43, inclusive) are evidence in themselves of the reliability of the test. The possibility of an infinitesimal amount of arsenic being present as a contaminant is admitted but does not come into consideration so far as the amounts that have been recorded are concerned. Indeed, anything less than 0.02 mg per hundred grams of tissue (corresponding to 0.001 mg of arsenic actually determined) was considered a negative observation. Our determinations are recorded in terms of elemental arsenic per weight of fresh or wet tissue.

**Neuropathologic Methods**—In each case many blocks of tissues were studied. In most instances, the tissue was embedded in paraffin, and hematoxylin eosin stains were made first. The other staining methods used were the cresyl violet, Mallory's phosphotungstic acid hematoxylin, Weigert's stain for myelin sheaths, Cajal's gold chloride and sublimate, and the Hortega silver carbonate methods of impregnation. These methods have been described elsewhere.<sup>101</sup>

### Acute Fatal Poisoning from Inorganic Arsenic (Cases 1 to 7)

Whenever the history was available the symptoms were typical of those of acute arsenical poisoning—vomiting, headache, diarrhea, and in 2 instances convulsions. In Cases 1 to 4, in which considerable amounts of arsenic were found in the stomach, death occurred within twenty-four hours. In these 4 peracute cases the most definite evidence of pathologic change in the brain was in the oligodendroglia which had become greatly swollen and had apparently multiplied. Also, proliferation of the microglia and cerebral edema were present. There were incipient nonspecific changes, chromatolysis or pyknosis, in the nerve cells. These changes are similar to those of "serous encephalitis" of Brown and Symmers<sup>102</sup> and those of "acute toxic encephalitis" of Grinker and Stone.<sup>103</sup> The pathologic findings, therefore, must be considered as the nonspecific effect of a noxious agent which causes death very rapidly. A fully developed inflammatory reaction is not present.

In Cases 5, 6, and 7 the period of survival was from four to eight days. In addition to the observations made on the first group of cases, there were a few perivascular hemorrhages in Cases 5 and 6 and some perivascular cells similar to lymphocytes in Case 7.

These cells are mostly oligodendroglia. Cases 5, 6, and 7, therefore, represent the transitional stage from the peracute

poliomyelitis serum. Accordingly, the corresponding intramuscular injections of serum were given. Repeated examinations of the ocular fundi gave negative results. Occasionally, injection of a solution of salt and glucose intravenously was necessary to maintain a proper intake of fluid. Although nasal feeding was instituted, the patient became weaker rapidly. On November 20 the temperature, pulse rate, and respiratory rate increased and evidence of bronchopneumonia appeared. Death occurred on November 22.

Necropsy was performed two hours after death and before embalming was done. A bacteriologic culture of the heart's blood resulted in absence of growth. A specimen of the blood was sent to Dr. Thomas Rivers of the Rockefeller Institute in New York. He reported the absence of neutralizing antibodies for virus of lymphocytic choriomeningitis. Chemical examination of 100 Gm. of brain for the presence of lead was negative. However, 0.37 mg. of arsenic was found per hundred grams of brain tissue.

Examination of the viscera revealed bronchopneumonia, a chronic gastric ulcer, and chronic tuberculosis of the lymph nodes of the hilus, liver, and spleen.

Macroscopic examination of the central nervous system gave negative results. Microscopic study revealed severe encephalitis marked by a profound degree of perivascular infiltration with lymphocytes and plasma cells (Figs. 1 and 2). Chronic meningitis was also present (Table 4).

*Summary of Clinical Observations*—There were 9 male and 3 female patients in this group (Table 3). The ages ranged from 4 months to 65 years. The duration of life from the onset of cerebral symptoms varied from sixteen days to a few years. Although some evidence of diffuse cerebral disturbance was recognized in each case, evidence suggestive of specific cerebral localization was not found. Usually neurologic examination revealed drowsiness, generalized weakness, nystagmus when the patient attempted to look to either side, and Babinski responses which could be elicited on both sides. The diagnosis of arsenical poisoning was made in only 1 case (Case 49), and this was made by Dr. H. W. Woltman. The clinical course in these cases may be described as that of progressive diffuse cerebral failure. There was usually a history of fatigue and perhaps a mild headache for some weeks or months. Then the patient became bedridden and progressively weaker, slipped into coma, and died.

Although one could arbitrarily designate those cases with survival periods of a few weeks as "subacute" and the others as "chronic," there is no correspondingly sharp

demarcation in the alterations of the tissues as seen microscopically. This apparent discrepancy between clinical and pathologic observations is probably explained by the fact that diffuse minute cerebral lesions may be present for a long time before the patient is aware of any specific symptoms.

*Summary of Chemical Observations*—The brains contained from 0.10 to 0.83 mg. of arsenic per hundred grams of tissue (Table 3). These concentrations are of the same degree as those found in the more acute forms of fatal arsenical poisoning (Table 1) and also those found in cases of so-called hemorrhagic encephalitis due to arsphenamine (Table 2). A significant amount of arsenic was not found in the liver in any of these 12 cases. Unfortunately, in most instances the liver was not examined for arsenic until after the specimens had been preserved for some time in large crocks of formalin. However, in Case 49 the fresh, unembalmed liver was tested and it was in this case that the liver contained 2.0 mg. and the kidney 0.23 mg. per hundred grams, and that 1,443 cc. of urine contained both 0.04 mg. of lead and 2.3 mg. of arsenic.

*Summary of Pathologic Observations*—As indicated in Table 4, there was frequently an abnormally large number of cells in the spinal subarachnoid fluid. These cells usually were recorded as small lymphocytes, but the likelihood that some of them were plasma cells or oligodendroglia cannot be denied. The number of cells in the fluid was generally proportional to the number seen in the meninges at histologic examination. There were erythrocytes and occasional polymorphonuclear cells in the meninges of only the postoperative cases (Cases 47, 50, and 51).

Gross examination of the brain in these 12 cases revealed few noteworthy findings. In 5 cases there was slight atrophy of the cortex, in the same number there was granular ependyma, in 4 the brain was grossly normal, and in 1 case each, edema, congestion, and increased density of the white matter were present.

Chromatolysis of the nerve-cell bodies was generally present in moderate degree, but it is questionable whether these alterations signify antemortem or postmortem degenerative changes. Pyknosis was generally absent. Moderate degrees of satellitosis and neuronophagia were the rule. Proliferation and swelling of the astrocytes were found to a moderate degree in Case 45—an infant. Similar "progressive" changes in the astrocytes to a lesser degree were also present in

recent infarcts, polymorphonuclear cells were also included in these zones of infiltration

The age of the patients ranged from 22 to 56 years. Symptoms had been present from four to eight months before death. Less than 0.02 mg of arsenic per hundred grams of brain tissue was found in each instance.

It is clear that these cases represent instances of diffuse cerebral damage in which cerebral symptoms lasted over a period of months. The fact that arsenic was not found in the brain in a single instance is strong evidence against the hypothesis that arsenic is deposited in the brain in all cases of chronic cerebral damage. This view is substantiated by those other instances of long-standing cerebral disease which are included in the main group of controls (Cases 14-37).

### Subacute Encephalitis Associated with Presence of Arsenic in the Brain (Cases 44 to 55)

*Report of a Representative Case (Case 48)*—A rancher, aged 57, registered on October 29, 1937. He complained of generalized weakness of one month's duration. His past history included tinnitus, vomiting, vertigo, and progressive deafness in the right ear. For four or five years the episodes of severe vertigo and vomiting had been progressive in severity and frequency. However, his general health was good until one month before registration. At that time he was chilled for several hours. He had generalized soreness of the muscles for seven to ten days and generalized weakness which gradually progressed to the point of making him bedridden. There was an occasional mild bifrontal headache. His spinal fluid, examined one week before registration, exhibited normal pressure and a positive Pandy test. The concentration of sugar was 15 mg per hundred cubic centimeters of spinal fluid and there were 40 cells per cubic millimeter. Of these, 75 per cent were reported as lymphocytes. A pellicle did not form in the spinal fluid, and the results on culturing the fluid and examining the smear were negative. The result of the colloidal gold test was 5555431000.

Examination revealed an apathetic individual who responded to questions with great effort. The pulse rate, temperature, and blood pressure were normal. Examination of the limbs and viscera gave negative results. The cranial nerves were normal except for nystagmus in both horizontal and vertical directions and bilateral nerve deafness, more severe on the right than on the left side. The speech was moderately slurred. There was generalized muscular weakness of moderate degree. The abdominal and tendon reflexes were all moderately increased. The sign of Babinski and its confirmatory signs were present on both sides. There was moderate in-

coordination of all four extremities and some difficulty with successive movements. The patient was unable to stand or walk. The Kernig and Lasègue signs were slightly positive.

Examination of the eyes revealed that the rotations of each eye were somewhat limited in each direction, perhaps attributable to poor cooperation. Examination of the ocular fundi gave negative results, and the retinal arteriolar diastolic pressure was normal.

The urine was normal. The concentration of hemoglobin was 15.7 Gm per hundred cubic centimeters of blood. Erythrocytes numbered 4,440,000 per cubic millimeter of blood and the leukocytes, 9,000 to 12,500. The polymorphonuclear neutrophilic leukocytes ranged between 83 and 96 per cent, and the blood smear was not abnormal. The Kline, Kahn, Hinton, and Kolmer tests on the blood serum all gave negative results. Agglutination tests of the blood gave negative results for *Brucella abortus* and for typhoid and paratyphoid. The concentration of blood urea was 48 mg per hundred cubic centimeters, of blood sugar, 97 mg per hundred cubic centimeters, and of blood chlorides, 566 mg per hundred cubic centimeters. The sedimentation rate was 10 mm per hour on one occasion and on a later occasion was 3 mm per hour. Roentgenograms of the thorax and head were normal. Examination of the spinal fluid on October 30 revealed a clear, colorless fluid under normal pressure. The Kolmer and Kline tests gave negative results, and the total protein measured 15 mg per hundred cubic centimeters of spinal fluid. There were 57 small lymphocytes, 2 polymorphonuclear cells, and a few erythrocytes per cubic millimeter of spinal fluid. The result of the gold sol reaction was 5552210000. On culturing the spinal fluid on brain broth and on blood agar, growth of organisms did not occur. A Gram stain of the spinal fluid revealed no organisms. The concentration of sugar was 54 mg per hundred cubic centimeters of spinal fluid, and the concentration of sugar was 716 mg per hundred cubic centimeters of chlorides.

The patient's course was marked by disturbances of consciousness—apathy, restlessness, and occasional disorientation. Involuntary deviations occurred. The pulse rate, temperature, and blood pressure remained normal for three weeks. Examination of the spinal fluid was repeated November 8, 1937. The fluid was clear and colorless and was under a pressure of 19 cm. of water. Response to jugular compression was normal. The results of the Kolmer and Kline tests were negative. The total protein was 75 mg per hundred cubic centimeters of spinal fluid. There were 39 small lymphocytes per cubic millimeter, but neither polymorphonuclear cells nor erythrocytes were present. The result of the gold sol reaction was 5555321000. The concentration of sugar in the spinal fluid was 55 mg per hundred cubic centimeters. Cutaneous tests revealed a strongly positive reaction to stock encephalitis serum and to Los Angeles

progressive course in these cases excludes the type of encephalitis seen in St. Louis in 1933, that in Australia in 1917 and 1918, and that of equine encephalomyelitis recently reported in humans.

All of the investigations for other well-recognized etiologic factors have proved fruitless. Many bacteriologic studies of blood, cerebrospinal fluid, and tissues in these cases have failed to yield a pathogenic organism.

We can now come to the question whether arsenic should be considered the main pathogenic agent in Cases 44 to 55. In the first place, there is no doubt that the amounts of arsenic found in the brains of these cases are abnormally large. This observation in itself does not imply that arsenic is the cause of the condition, for it is possible that the arsenic that most Americans ingest and that must circulate in the blood stream before being excreted might be deposited at a locus minoris resistentiae in greatest concentration. To consider this possibility, a special control group of cases was studied. These cases (38 to 43) resembled the cases of encephalitis in duration, symptoms, and pathologic findings but were attributable to a well-recognized cause—namely, malignant hypertension. The fact that an appreciable amount of arsenic was not found in the brain in a single instance is strong evidence against the likelihood that arsenic is deposited in all brains that have been diffusely damaged over a period of months. Similar evidence is adduced from a consideration of those other instances of cerebral disease of long standing in which arsenic was not found in the brain and which are included in the main control group of cases (14 to 37).

### Recapitulation

Well-recognized chronic arsenical poisoning frequently is manifested by diffuse cerebral symptoms, fatigue, headache, vertigo, drowsiness, and impairment of mental activity. These are precisely the same symptoms from which the patients in this group (Cases 44 to 55) suffered and which constitute a syndrome that is summarized as "progressive diffuse cerebral failure."

The toxic effect of arsenic on the nervous system is not specific and is marked by alterations in the ganglion cells and by regions of perivascular necrosis. In subacute and chronic cases these regions of necrosis become filled with lymphocytes and plasma cells. The cases in this series exhibit such changes.

Finally, the actual concentrations of ar-

senic in the brain (that is, 0.1 mg. of arsenic or more per hundred grams of brain tissue) in these cases are abnormally large. They happen to be the same as those found in cases of acute arsenical poisoning due to either inorganic or organic compounds of arsenic and recorded both in the literature and in our own series of such cases.

Therefore, all the observations (clinical, pathologic, and chemical) concerning these 12 cases of subacute encephalomyelitis are consistent with the hypothesis that they represent instances of chronic arsenical poisoning. Further evidence for or against this hypothesis can be obtained by microscopic studies of brains in cases of recognized chronic arsenical poisoning and by the determination of the content of arsenic in the excreta and tissues, especially the hair, in other cases of subacute or chronic meningoencephalomyelitis.

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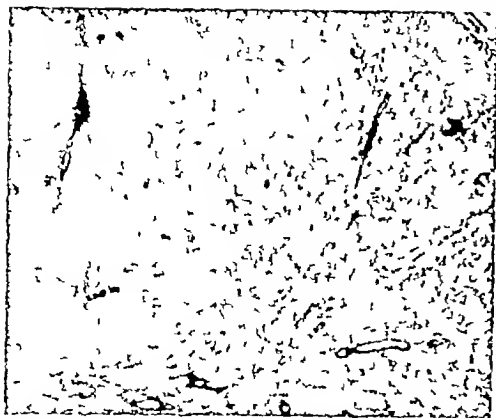


FIG 1 Posterolateral quadrant of thoracic region of spinal cord. Several blood vessels are "cuffed" with cells (Case 52). Hematoxylin and eosin stain ( $\times 22$ )

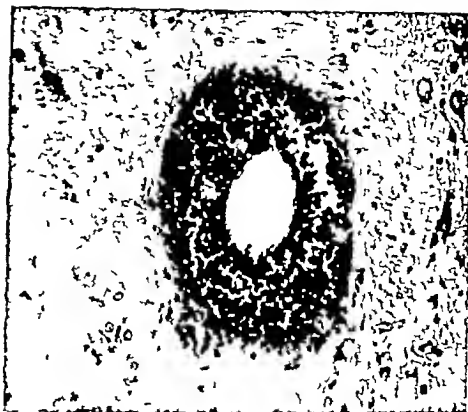


FIG 2 Perivascular infiltration in the thalamus (Case 51). Hematoxylin and eosin stain ( $\times 200$ )

Cases 47, 48, 51, and 53. Generally there were marked diffuse proliferation and swelling of the oligodendroglia and slight similar changes of the microglia. These changes are not specific and occur in most of the brains obtained in cases in which coma or other evidence of diffuse cerebral impairment has occurred before death. There were focal collections of microglia and oligodendroglia only in Case 45. Since this brain is that of an infant, these circumscribed aggregations of cells must be considered normal features, possibly germinal centers, and not as evidence of inflammation.<sup>105</sup> In no case was there severe change in the walls of the vessel or in their lumens. Neither thrombosis nor embolism was observed. Slight proliferation of the intima was present in some cases.

Perivascular aggregation of mesodermal elements was present in all cases and was usually observable with even the low power of the microscope. The perivascular cells were very numerous (Figs 1 and 2) in all instances except Cases 44, 46, and 49. With the exception of these 3 cases, evidence of a widespread inflammatory reaction could be found in every part of the central nervous system from the frontal poles to the conus medullaris. The gray matter and white matter were equally affected. In the 3 exceptional cases there was a lesser degree of infiltration around the smaller blood vessels in various parts of the nervous system. Even in these cases there was no apparent site of election for the perivascular cells. Since polymorphonuclear cells were rarely found among the infiltrates, they are not listed in Table 4. Usually the perivascular cellular infiltrates

were more profuse in the cases of longer duration. However, neither the number nor the kind of cells was related to the amount of arsenic in the tissue.

In all cases there was interstitial cerebral edema of moderate degree. The clear spaces around the ganglion cells and the blood vessels, which are recorded in Table 4 as pericellular and perivascular edema, respectively, do not represent certain evidence of antemortem change. Stains for iron were made in each case and failed to reveal the presence of this substance in the microglia, the adventitial coats of the vessels, or anywhere else in the tissues. There were no areas of demyelination—perivascular, subependymal, or otherwise. In brief, the histopathologic changes were those of subacute or chronic disseminated meningoencephalomyelitis. It is now being accepted<sup>106</sup> that these cases include a heterogeneous group of conditions.

**Etiologic Considerations.**—Evidence of syphilis was not obtained from the history in any of these cases (44 to 55). Serologic tests for syphilis were performed on the blood in each case and on the cerebrospinal fluid in all cases except 1 (Case 45). All these serologic tests yielded negative results. Evidence of syphilis was not found in any of the tissues of the body, although a complete necropsy was performed in each case.

All of the cases were terminated fatally between 1924 and 1937. In no instance did the symptoms begin at the time of the pandemics of influenza and encephalitis (1917 to 1920). Furthermore, there was neither clinical nor pathologic evidence of the chronic forms of epidemic encephalitis. The slowly

# THE NERVE PATHWAYS AND CLINICAL FEATURES OF SHOULDER PAIN IN RELATION TO ANGINA PECTORIS

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THAT pain in the region of the left shoulder may enter into the syndrome of angina pectoris has been recognized by many observers. Indeed, not alone the left shoulder but the right articulation, as well as other areas supplied by various components of the cervical plexus, are known sites of pain.

The problems evoked in connection with these atypical manifestations revolve about the following questions. Is this pain an example of referred anginal pain which, in this instance, strikes an atypical zone? Is this pain of local origin, i.e., confined to the shoulder or neighboring territory, and free of any anginal connotation? Finally, does this pain arise outside the cardiovascular apparatus and coexist in sufferers of anginal pain in whom multiple foci for pain are responsible for bizarre and confusing clinical problems? This communication attempts to answer these queries and to offer an explanation for the various types of shoulder pain connected with angina pectoris.

But first let us try to be clear on what is meant by the term angina pectoris. It connotes a clinical picture or syndrome associated, as a rule, with a lesion in a coronary vessel, the heart muscle, or aorta and accompanied, in most cases, by a prominent triad of reactions—namely, shock, mental anguish, and intense precordial or radiating pain. Other well-recognized clinical features are sudden change in blood pressure, apnea or dyspnea, exhaustion, prostration, abnormal sweating, localized constriction of blood vessels or muscles, etc.

This, however, is not the entire story, for we must include cases with clinical manifestations of angina pectoris (sometimes even ending in swift, unexpected death) in which no demonstrable somatic damage comes to light. For example, the triad and the other signs and symptoms just listed have been observed in noncardiac states like (1) esophageal herniation and (2) in the form of severe thoracicobrachial neuritis graphically portrayed by Lian<sup>1</sup> and Boyer.<sup>2</sup> Pain simulating the anginal type, as well as a variety of autonomic manifestations, is en-

countered also in valvular disease, anemia, Grave's disease, toxic states, etc.

It would appear, therefore, that we may speak of angina pectoris as occurring with or without cardiovascular damage. The clinical state that accompanies noncardiac conditions and is indistinguishable from what we are accustomed to call angina pectoris may be just as alarming and dangerous. The essential point is that, apart from any question of somatic injury and the problems that arise from this, the clinical manifestations, at least of the attack, conform to a group of reactions referable to the autonomic nervous system. These reactions are set off and distributed in the sympathetic and parasympathetic divisions.

Associated or not, as the case may be, with somatic alteration of the heart, coronary vessels, or aorta, in a generic sense angina pectoris may be looked upon as an expression of an abnormal physiologic activity of the autonomic nervous system as a whole. This activity involves not only the peripheral autonomic pathways but the central nuclear elements in the neuraxis, chiefly of the brain stem but also of the cortex and spinal cord. Accordingly, we would do well to study more carefully the autonomic manifestations by which any form of angina pectoris is announced, not neglecting, of course, the import of sequelae which ensue from pathologic alteration in the cardiovascular apparatus when the latter is damaged.<sup>1,2</sup>

It is important also to re-emphasize that pain need not be the sole or even the chief testimony of angina pectoris. Pain may be absent, dyspnea, strange anxiety, abnormal sweating, constricting manifestations, variations in blood pressure, etc., representing the telltale evidence of this disorder. However, when anginal pain is present, it may be analyzed according to rather well-established anatomic and physiologic criteria. Anginal pain, as well as other types of pain in relation to the shoulder region, a subject that forms the main theme of this communication, is a case in point and may be taken as an example of the factors concerned with the usual or atypical radiation of cardiac pain.

As a rule, anginal pain is characterized by a reflection into a well-defined dermatomic

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## A PRIME CONSIDERATION

A speaker who was presenting the gavel to the president of a southern state medical society remarked that he was in his prime, and he said it reminded him of the old gentleman who was to marry a young girl. The old black mammy in the family resented it and said

"There can't nothing good come out of that wedding. You is too old for that gal."

He said "Mammy, I am just in my prime!"

"Yes, that's true," she replied, "but when she gets in her prime, where is your prime going to be?"

ally The relationship of such accessory groups to the heart and aorta is depicted in Fig 1 The diffuse and multiple afferent connections between a viscus and many cord segments is accomplished by these accessory fibers in conjunction with the main and predominant group This arrangement of fibers is a fundamental anatomic endowment

On occasions, the role of the accessory groups takes on a special significance This comes to pass when the fundamental anatomic pattern of afferent fibers lacks a preponderance of entry into the cord or when, for any reason, this zone of concentration, "the bottle-neck" White<sup>15</sup> (i e, the upper white rami in the case of the heart innervation), for example, is destroyed (as after surgical intervention or paravertebral alcohol block) and the burden of afferent conduction is thrown upon accessory groups of fibers

A similar but more restricted possibility for bringing into action an increased number of fibers holds also for the somatic neurons Normally the connections between a dermatome and the neuraxis do not exceed three, at most five, consecutive cord segments, but the range may be greater, never, however, attaining the wide-flung and multiple pattern characteristic of the afferent visceral system of fibers

*The Function of Accessory Afferent Fibers in Referred Anginal Pain* (1) *The accessory sympathetic (visceral) neurons*—The accessory fibers, in our opinion, may play a part in the transmission of anginal pain into the shoulder The evidence for this is derived, at least, from three sources First, there is the clinical experience already mentioned, wherein (as after paravertebral alcohol block or after surgical procedures carried out on the left sympathetic cardiac innervation) anginal pain recurs and is propagated by left upper cervical nerves, into hitherto untouched areas Second, according to Heinbecker,<sup>7</sup> in the case of the heart, "afferent fibers traverse the superior cervical sympathetic ganglion to the sensory root of the fifth cranial nerve and to the dorsal roots of the upper three or four cervical nerves via the gray rami communicantes Similar fibers pass from the middle cervical sympathetic ganglion to the fourth and fifth cervical dorsal roots, and from the inferior cervical sympathetic ganglion to the sixth, seventh, and eighth cervical dorsal roots Likewise, the afferent fibers pass through the upper six or seven thoracic spinal roots via both white and gray rami communi-

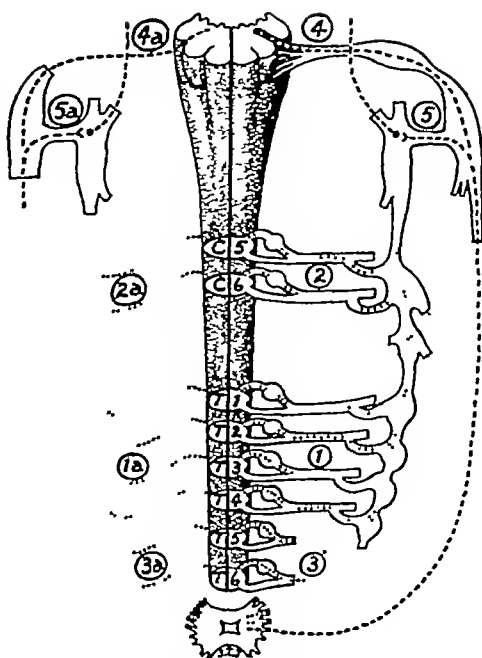


FIG 1 (From *Angina Pectoris* by H. R. Miller, 1939, Williams & Wilkins Co Reprinted by permission of the publishers.) This is a schema of groups of afferent fibers capable of transmitting referred anginal pain. (1) Represents the usual, well-recognized, sinistral group entering the Th 1 to 4 cord segments through corresponding white rami, (1a) is a similar dextral group much less frequently involved. (2) Represents upper left cervical fibers going from upper cervical ganglia to corresponding cervical cord segments, (2a) similar dextral fibers (3) Represents lower thoracic fibers going from the lower thoracic ganglia to corresponding cord levels, (3a) dextral fibers (4) Represents the pathway of cardiac afferent fibers in the left vagus destined for the medulla, (4a) a similar pathway on the opposite right side (5) Represents the pathway of vagal cardiac afferent fibers which ends in the superior cervical sympathetic ganglion, (5a) a similar pathway on the opposite right side (6) Not included in the drawing is the posterior group of rami connecting the upper thoracic sympathetic chain to the cardio-aortic plexuses (7) Also not included are the sympathetic fibers from the vertebral plexus, entering the cervical plexus and sending communications to the ansa of Vieussens The vertebral plexus is generally not accepted as an afferent pathway for cardio-aortic pain.

cantes" Third, the studies of Schragger and Ivy,<sup>14</sup> Davis and his co-workers,<sup>4</sup> and especially of Ashkenaz<sup>1</sup> have demonstrated that a viscus, the gallbladder for instance, is connected to the neuraxis by afferent pathways far more numerous than we were formerly led to believe

territory innervated by the left upper four intercostal nerves, this reflection or radiation skirts but does not often include the left shoulder. As a consequence, in most instances the differential diagnosis between pain arising in or confined to the shoulder region and the precordial (anginal) pain transmitted by these upper intercostal nerves into the pectoral region and down the inner side of the left arm is not a difficult task. The anginal pain, however, that lashes the shoulder and adjacent areas is not always so easily recognized or so accurately interpreted. Boas and Levy,<sup>2</sup> Edeiken and Wolferth,<sup>5</sup> Libman,<sup>11</sup> and others have described such occurrences. This type of pain is an illustration, we believe, of the manner in which *the shoulder region acts as a dermatome equivalent for the reception of anginal pain*. At first flush, such occurrences seem puzzling in their mechanism and, from a diagnostic point of view, frequently are baffling in their clinical guesses. However, a careful analysis of the visceral and somatic neurons called into action throws light on these problems.

## I Mechanisms and Pathways

(a) *The Single Nervous Pathway for Shoulder Pain*—The common variety of shoulder pain (and this includes pain from the bursa, muscles, bone, etc., also from the cervical or brachial plexuses) has but one pathway for its transmission—by somatic neurons. The registration of the pain is accomplished without the intervention of sympathetic fibers. The pain felt in this region has its genesis here. No mediation comes into play. This, therefore, is not referred pain. Moreover, the upper cervical nerves (C 4, 5, and 6) which carry sensory impulses from the shoulder enter the cord, in the majority of instances, well above those levels (Th 1 to 4) normally concerned with the mediation of referred cardio-aortic (anginal) pain.

(b) *The Dual System of Neurons in Referred Anginal Pain*—Two independent nerve pathways participate in the propagation of referred anginal pain. Impulses of pain, for example, originating in the heart, coronary vessels, or aorta are transmitted into the upper left thoracic segments of the spinal cord (Th 1 to 4) by afferent sympathetic visceral neurons. At these levels afferent somatic nerves (the upper intercostals) are brought into action, and these, together with the visceral fibers, function to refer pain into complementary related dermatomes. The dermatomes comprise the left infraclavicular

or pectoral region and the inner aspect of the left arm and forearm down to the tip of the small finger and the ulnar side of the fourth finger. The mediation of the reference of this pain, it is generally held, takes place in the substantia gelatinosa of the cord, but there is reason for believing that mediation is not always intraspinal and that it may take place, for example, in the dorsal roots.<sup>12</sup> At any rate, pain is engendered deep in the chest and reflected into a surface (dermatome) area.

(c) *The Afferent Conduction System in Referred Pain*—To understand referred anginal pain into the shoulder we must understand the afferent conduction system that connects viscera and dermatomes to the neuraxis and have some realization of the likelihood of anatomic variation that exists with regard to the afferent sympathetic and afferent somatic components of this system.

Each organ possesses a system of centripetal (afferent) sympathetic fibers which go to a specific number of dorsal roots and thence, it is believed, to the substantia gelatinosa in the cord. In most individuals these fibers converge predominantly upon a limited number of dorsal roots at a particular level of the cord, for instance, in the case of the heart the preponderance of convergence and entry is at the levels of Th 1 to 4 and on the left side, in the case of the gallbladder the levels are approximately Th 8, 9, and maybe 7 according to Head,<sup>6</sup> Th 9 and 10 according to Kappas<sup>7</sup> and Lâwen,<sup>9</sup> and on the right side. This rather sharply defined concentration of fibers accounts for the particularity with which each organ, be it the heart or the gallbladder, etc., announces visceral pain into related dermatome areas.

*The Anatomic Arrangement of Accessory Afferent Fibers*—Although the bulk of afferent visceral fibers from an organ commonly enters the cord as a main group, a considerable number of these fibers reaches the cord at many other levels. Such fibers outside the zone of concentration, in most cases either too few or too diffuse to carry any appreciable quantity of sensory impulses of pain, are, nevertheless, accessory fiber groups and, what is more to the point, are capable of conveying visceral sensations into the cerebrospinal system. The existence of these groups, therefore, enlarges the potentiality of any viscus for bringing into action many cord segments otherwise involved passively or not at all. In this way the entire thoracic and even lumbar levels may participate, even bilaterally.

tion, or in the deltoid (C 5 and 6) or trapezius (C 3 and 4) muscles \*

Often the anginal pain in the shoulder region is excruciating, limited to the shoulder itself, deep in the joint, or is situated superficially, spreading perhaps into supraclavicular and pectoral districts through lower cervical nerves. A point of interest is the occasional localization of pain posteriorly, for example, in the subscapular region. This is in contrast to the conspicuous absence of pain in the posterior chest wall in most cases of anginal radiation. After the sharp stang subsides, shoulder pain is known to linger as a dull ache. It is set off by movements in or near the joint, by pressure or the weight of clothing or bed clothes, or even by changes in meteorologic conditions. With respect to provocation, periodicity, intensity, duration, and spread, anginal pain at the shoulder differs little, if at all, from pain projected into other surface regions, and the shoulder, like other surface regions, may remain the sole outpost feeling pain, sometimes long after the precordial features have subsided. Whereas the localization of anginal pain into a shoulder is uncommon, all the other accompanying features of a paroxysmal episode of angina pectoris (coronary or noncoronary) may be typical.

(b) *Nonanginous Pain at the Shoulder Region Simulating Anginal Pain*—Many, if not most, of the nonanginous types of pain in this area are readily distinguished from anginal pain referred into this district. These types, in contrast to the anginal variety, are practically always more extensive. The pain overlaps the areas supplied by the musculocutaneous nerve (C 5, 6, and often 4) or the radial, musculospiral nerve (C 5, 6, 7, and 8, Th 1) or the median nerve (C 5, 6, 7, and 8, Th 1) and also the ulnar nerve (C 8, Th 1, and often C 7). In other respects, too, pain of this category is unlike the anginal in that it is diffuse not radicular, in that the posterior as well as the anterior chest wall feel pain, and in that features that accompany angina pectoris are usually absent.

The painful disorders at and near the joint are variable and too numerous to list here. Some are stubborn, others yield promptly to mechanical manipulation. Still other types of shoulder pain are due to destructive or deforming processes and are hardly amenable to simple methods of therapy. Limitation of

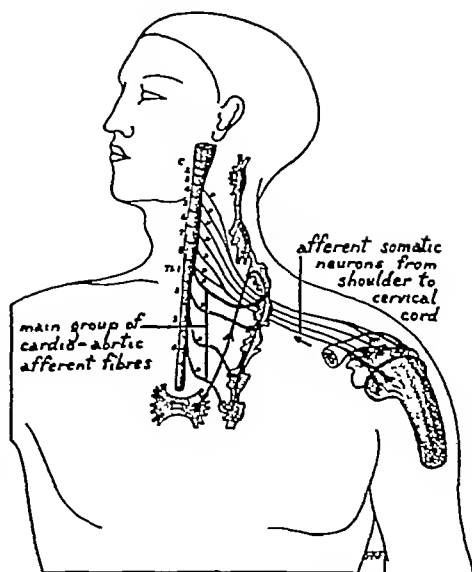


FIG 3 (From *Angina Pectoris* by H. R. Miller, 1939, Williams & Wilkins Co. Reprinted by permission of the publishers.) The routes for referred anginal pain to the shoulder. The afferent somatic neurons from the shoulder may enter the spinal cord by accessory fibers as low as the first or even second thoracic levels, a region that receives cardiac afferent impulses. Anginal pain could thus be referred through the lowermost (accessory) somatic neurons into the shoulder.

motions at the joint itself and localized points of articular tenderness aggravated by direct pressure or by passive movements are almost pathognomonic signs of local disease. A most frequent cause of pain in this locality, aside from arthritic conditions in general, are affections of the brachial or cervical plexuses, and those on the left side sometimes are apt to simulate anginal pain. An interesting and fortunately rare type is the thoracobrahial neuralgia described by Lian<sup>10</sup> and also by his pupil, Boyer.<sup>11</sup> This is a severe sinistral neuralgia with intense pain into the precordium, the localization, the character of the pain, and the features of shock and mental apprehension which may accompany the pain conspire to make this picture strangely like a paroxysm of angina pectoris.

As a rule, however, brachial or upper cervical neuritis, a fairly common disorder, is sharp and abrupt in its onset, and its intense pain is well localized. The muscles supplied by the affected nerves may develop paralysis and later atrophy, and trophic alterations in the skin are not rare. The neuritis, as a rule, lasts weeks or months, disappears gradu-

\* It is important to exclude pericardial and diaphragmatic pleural pain transmitted into the trapezius muscles by way of the phrenic nerve into C 4 and 5 cord levels.<sup>12</sup>

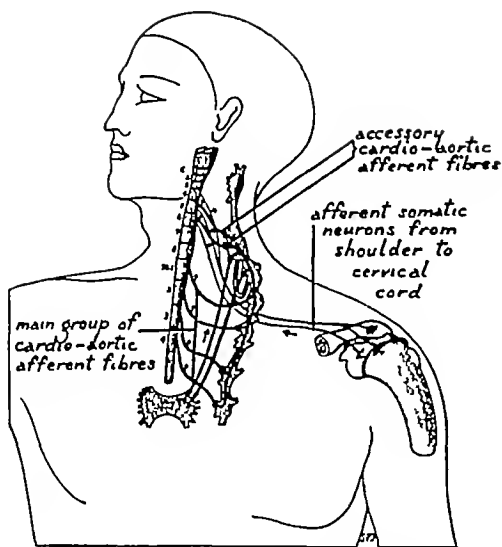


FIG 2 (From *Angina Pectoris* by H R. Miller, 1939, Williams & Wilkins Co. Reprinted by permission of the publishers) The routes for referred anginal pain to the shoulder. The fourth, fifth, and sixth cervical nerves connect the shoulder to corresponding cervical segments of the spinal cord. Visceral afferent fibers from the cardiac plexus reach the upper thoracic segments, Th 1 to 4, of the cord by means of corresponding upper thoracic white rami. In this drawing a group of cervical rami is portrayed that would be capable of carrying afferent impulses from the heart into those cervical cord segments that receive afferent neurons from the shoulder. Anginal pain could thus be referred into the shoulder.

Fig 2 illustrates the pathway of accessory afferent sympathetic fibers in the upper cervical region. Such fibers, in which in all probability sensory impulses are able to travel, Henbecker,<sup>7</sup> may well carry painful impulses from the cardiac plexuses into those cervical segments of the cord linked to the shoulder by the fourth, fifth, and sixth cervical nerves. These cervical segments could then serve as an intraspinal zone for the mediation and reference of anginal pain between heart and shoulder region.

(2) *The accessory somatic neurons*—In an analogous way (Fig 3) accessory afferent somatic fibers may exist in the lower cervical nerves and gain an entry into the segmental levels of C 8, Th 1 and 2, these are segments, as we have already observed, which can receive cardio-aortic impulses of pain. By these fibers, then, the shoulder could be brought into relation with a common intraspinal zone for the mediation of anginal pain, the shoulder serving as an additional district of reference.<sup>13</sup>

The multiplicity and wide dispersion of afferent visceral and somatic neurons and their potentiality of overlapping in zones of the cord other than those usually restricted to each organ and its complementary dermatomes make it possible to comprehend by what nerve pathways pain from a viscus can be projected into dermatomes (or into distant organs) otherwise unrelated. Furthermore, by virtue of this overlapping of both sets of accessory fibers, pain may travel in either direction, i.e., not only from a viscus to dermatomes but vice versa, in a reverse direction. This bidirectional conduction gives us a basis for comprehending the routes occasionally followed in the bizarre, reversed transmission of pain from a dermatomic area (shoulder or brachial plexus, for instance) into the precordium (see later).

## II The Differential Clinical Diagnosis of Shoulder Pain

(a) *Anginal Pain Referred into the Shoulder District (Left)*—This type of pain is referred to the shoulder very probably as a consequence of the summated effect of two streams of impulses which reach a common area in the cord. The effect of (a) impulses derived from the shoulder and delivered to this common area by somatic fibers is combined with (b) the effect of impulses engendered in the cardio-aortic apparatus and transmitted by cardio-aortic visceral neurons to the same zone in the cord.

Clinically, it is sometimes possible to reduce the total quantity of impulses received in the cord by a variety of procedures. One of these is to press very hard on the brachial plexus as recommended by Libman.<sup>12</sup> The flow of afferent impulses in the plexus traveling toward the cord will be decreased and, thus, also the total number of impulses prerequisite for the induction of referred anginal pain. The same principle obtains in relieving referred anginal pain as when a local anesthetic is applied to a related dermatomic surface.

Generally speaking, referred anginal pain into the shoulder exhibits a radicular nature characteristic of the more common distributions. The reference is not diffuse but patchy and orderly, covering contiguous areas, occasionally, however, as is also the case with common radiations, the pain in the shoulder remains registered, for example, in one small area, i.e., over the subacromial bursa or in the biceps muscle or at its inser-

as a prelude to treatment. One part of such system should always be a careful functional test of the structures from which the pain might arise—that is, a careful palpation, manipulation of joints, etc. Another is the use of novocain block in nerve trunks, plexuses, nerve roots, or by means of spinal anesthesia. Dr. Miller has mentioned that using novocain in the area of reference may lead to relief, and I can easily imagine that one could be misled by this into supposing that the pain had a local origin. I should like to ask Dr. Miller whether some functional test of the heart muscle—say a standardized exercise or injection of adrenalin—may be relied upon to elicit pain in the shoulder of cardiac origin and might therefore be of diagnostic aid.

I should also like to ask Dr. Miller whether his observations have a bearing on the surgical treatment of cardiac pain.

This paper seems to be an outstanding example of the manner in which urgent clinical problems may impel an internist to make physiologic observations overlooked by the pure physiologist.

Dr. Tasker Howard, *Brooklyn*—A stiff and painful left shoulder in a patient with coronary occlusion or angina pectoris is a common and often a troublesome complication. It is much more common than the occurrence of immediate pain in or about the shoulder joint during an attack of angina or during the initial pain of coronary occlusion. A patient will have no pain at all in the shoulder during severe attacks of cardiac pain, which may be referred down the inner side of the arm, and yet later develop a very lame shoulder joint. With this lame joint, if untreated, he may develop severe aching in the joint, in the neck, and down the outer aspect of the arm or the whole arm. If this is a matter related to the influence of the reflex arc originating in the heart, why does he not have the aching at the site of the original referred pain instead of in an area rarely so affected? Dr. Miller has told us that the usual area of referred pain is in the left pectoral region and down the inner side of the left arm. Pre-existing pathology almost never exists in this zone. On the other hand, low-grade inflammation is common in and about shoulder joints,

particularly in the bursae. Dr. Libman<sup>1</sup> believes that it is more common in patients with coronary disease, since they both so often depend upon an underlying "gouty diathesis." These affected tissues about the shoulder, while lying outside the main current of reflex influences—that is, the upper four dorsal segments—may well fall within the scope of the accessory paths described by Dr. Miller.

If pain is initiated in this manner, the patient is inclined to keep the joint very quiet, thus putting into effect the mechanism described by King and Holmes<sup>2</sup> whereby the inactivity leads to loss of tone in the supporting muscles and ligaments with consequent relaxation of the capsule and increased vulnerability. The impaired circulation and lowered metabolic activity adds to the local difficulty. Tending to substantiate this view of the situation is the fact that physical therapy and particularly active movements of the shoulder joint are the most potent measures for its relief. It should be treated early. On the first appearance of shoulder lameness, the patient should be instructed to flex the arm with the palm at the front of the shoulder to reduce the load and abduct and rotate the shoulder joint repeatedly several times a day. It is a light exercise but very effective in clearing up this painful complication, particularly if it is instituted early.

Sir James McKenzie long ago pointed out segmental zones of hyperesthesia in patients with angina pectoris. These quite regularly corresponded to the segments Dr. Miller has designated as the usual pathway of referred cardiac pain and seldom included the region of the shoulder joint. The reflex influence alone therefore could scarcely account for the frequency of this phenomenon. That it has something to do with it is implied by the fact that the right shoulder is not affected unless there is some right-sided cardiac pain. All of this tends to substantiate Dr. Miller's conclusion that local pathology, usually pre-existing, plus reflex pain impulses to the shoulder joint or its immediate neighborhood, is most often responsible for the stiff and painful shoulder of angina pectoris and cardiac infarction.

<sup>1</sup> Libman, E. Bull. New York Acad. Med. 11 427 (1935)

<sup>2</sup> King, J. M., Jr and Holmes, G. W. J.A.M.A. 89 1956 (1927)

## ERASING THE STIGMA OF BEDLAM

An association organized by recovered psychiatric patients to fight the stigma attached to mental illness is doing much to restore such persons to a normal place in the social and business world, Pauline Rosenberg, Chicago, reports in *Hygeia, The Health Magazine* for November.

Founded in 1937, the organization is called "Recovery, the Association of Former Patients

of the Illinois Psychiatric Institute." Today it comprises more than 150 former patients and 600 relatives and friends who are associate members. Since its organization there has been a steady decrease in the percentage of relapses at the Institute, a large number of which are due to discrimination, distrust, fear, and suspicion that patients encounter on their return to the social and economic world.

ally, but is likely to leave weakness in its wake for many weeks. Parasthesias are frequent with the intense pain, and Horner's syndrome is a complication of some forms of cervical neuritis. Gout, diabetes, anemias, leukemias, poisons like alcohol, metals, and vitamin deficiencies are etiologic factors in the production of brachial as well as cervical neuritis. Infections like influenza, for instance, induce neuritis and local mechanical causes are numerous, e.g., a cervical rib or pressure from fractures, dislocations, tumors, etc., of the bone, or aneurism of nearby vessels, disease of the cord itself or its surrounding bony structures. In all these instances the resultant neuralgia may be homolateral and the distribution of pain will spread along the nerve pathways of the particular portion of brachial or cervical plexus involved.

(c) *Pain in the Shoulder Region Induced by Local Disease in Anginal Sufferers Who Also Refer Anginal Pain into the Shoulder*—Painful impulses simultaneously from two foci, i.e., at the shoulder and in the chest, combine to produce confusing clinical pictures. Thus, an anginal victim with a local lesion in or near his left shoulder may set up converging streams of sensory impulses traveling toward the neuraxis, and, if these impulses reach common cord levels connected to the heart and aorta and to the left shoulder, pain clinically may be bidirectional, i.e., projected in either direction from one focal area into the other. The manifold lesions that may strike the shoulder independent of a cardiovascular state and instigate bidirectional transmission of pain from the precordium to the shoulder or in a reverse direction need not be enumerated at this time. Careful analysis generally will yield the clue as to which focus is the chief offender with respect to initiating pain in its own vicinity and in the other focal zone.

An illustration of this bidirectional phenomenon is exemplified in the occurrence of precordial pain associated with pain from a bursitis or any similar localized lesion in or near the left shoulder in a subject suffering from coronary artery disease, for instance. The cardiovascular apparatus may be responsible for referred pain into the shoulder and conversely the localized lesion at the shoulder may precipitate precordial pain.

### Summary

1 Shoulder pain per se has its own somatic pathway. This is not an example of referred pain.

2 Anginal pain into the shoulder is an uncommon instance of referred anginal pain.

3 The mediation of this uncommon type of referred pain is accomplished (a) at the usual intraspinal segments, Th 1 to 4, through the intervention of somatic accessory afferent neurons from the shoulder traveling in the lower cervical plexus or in the upper intercostal nerves, or (b) the mediation takes place in cervical levels of the cord where the usual somatic nerves from the shoulder enter into cooperation with the action of accessory (cervical) afferent visceral neurons.

4 The more precise clinical differential diagnosis and management of the anginal and nonanginal types of shoulder pain rest upon a sound understanding of the nerve pathways involved.

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### Discussion

Dr Tracy J. Putnam, *New York City*—The subject of pain in and about the shoulder is an important and baffling one, and the suggestion Dr. Miller has made in regard to it appears to me to be original and stimulating. It is wholly reasonable to suppose that there may be an overflow of the pain from the angina into the upper cervical segments, and, as Dr. Miller has indicated, we may even find evidence for anatomic pathways. In a rather limited experience, I do not recall seeing any cases in which shoulder pain appeared to arise from the myocardium, but this may well have been because I was not awake to the possibility that it might occur.

In dealing with pain of obscure origin, it is, it seems to me, important to attempt to work out a systematic plan of differential diagnosis.

longed. The audiogram shows a loss for the perception of low frequencies and a relatively good bone conduction for low and high tones. The fitting of this type may be successful with a bone-conduction device. However, if the so-called air conduction, a receiver attached to a mold fitted in the ear canal, gives as good results as the bone and if there are no contraindications to the use of the air receiver, air conduction is preferable. The air receiver gives a much wider frequency range, and speech sounds more natural. In a chronic suppurative ear or one in which there is a perforation in the drum head and where the patient is subject to recurring discharge, the bone conduction receiver is preferable. A receiver fitted to a mold that has been made for the individual patient gives not only good air conduction but bone conduction at the same time, the vibrations striking the bony walls of the ear. Radio-tube amplification is generally to be preferred to the carbon microphone instrument as it has been developed to date. Class I is the only group with impaired hearing that can use a carbon microphone instrument very well, although we prefer the radio-tube instrument in most cases. For all other kinds of hearing impairment the radio-tube amplifier is best. To this first class belong many cases of clinical otosclerosis.

### The Pros and Cons of the Fenestration Operation

There has been much discussion lately on the fenestration operation to improve the hearing of patients with otosclerosis. Landsay<sup>4</sup> stated in a discussion on Lempert's operation "The most favorable condition for operation is fixation or ankylosis of the stapes with a free round window niche and membrane and good bone conduction. This is one condition also in which best results are attained with bone conduction hearing aids." To us, the opposite also seems to be true. Where a bone-conduction hearing aid will not improve hearing, the functional results of the operation will be doubtful. These statements are backed by experiments on bone conduction by Békésy.<sup>5</sup> Let us analyze briefly the pros and cons of the fenestration operation *versus* the hearing aid for the same disability.

The advantages of the fenestration operation are (1) that sound perception after operating is more natural and (2) that the patient has not the bother of a hearing aid. The disadvantages are (1) that no surgeon can promise the patient that the functional

result of the operation will be a lasting one, the result depending upon the reparative reaction on the bone, which no one can foretell. (2) The operation constitutes an artificial communication between the middle-ear structures and the intralabyrinth and intracranial structures, leaving a pathway from the middle ear to the brain. Although there seems to be no danger of an intracranial complication immediately after it, the prognosis of an incidental infection, after several months, of the tissues surrounding the fistula may be similar to that of an otitis with labyrinth fistula. (3) The operation alters the biologic condition of the labyrinth capsule by removing tissue and by the procedure of the plastic. This last statement is made with reference to Neumann's<sup>6</sup> study on late changes of the bone surrounding the cavities in the radical mastoid operation. He claims that the progressive loss of hearing in ears having the radical operation is due to otostatic changes taking place in the bony labyrinth. We do not know of any study having been made on late changes of the bone after the fistulation operation, nevertheless we are inclined to believe that the new condition in which the bone finds itself may alter the present otosclerotic pathology for the worse. In other words, if an operation becomes functionally unsuccessful after a period of time, the second disadvantage disappears by closure of the fistula but the third one remains, i.e., the new condition in which the labyrinth capsule finds itself after operation. If, after an unsuccessful operation, the patient has to wear a hearing aid, his condition is worse than if he had not been operated upon.

The disadvantages of the hearing aid are (1) that sound will not be received as naturally as after a successful fistulation operation, and (2) that the patient has to wear a more or less conspicuous instrument. The advantages are (1) that the patient will hear with the aid as long as the batteries and the mechanism of the instrument are good, (2) no operative measures are necessary, and more important still (3) the psychologic reaction of the patient on the eventual failure of the operation does not have to be overcome. Weighing the pros and cons of the said problem we are in favor of the hearing aid.

We have not read, unfortunately, of cases where the results gained with a properly fitted hearing aid have been compared with the results of the fistulation operation on the same patient. We would suggest that any patient to be subjected to the operation

## SOME PROBLEMS INVOLVED IN THE FITTING OF HEARING AIDS

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THE number of persons in the United States who are hard of hearing or deafened is estimated by Dr. Gordon Berry<sup>1</sup> to be six to eight millions. The late Dr. Austen B. Hayden estimated that there are five million people in the United States who require an instrument to give them the necessary hearing. This estimate may be high, but it certainly shows the hearing-aid problem to be a major one.

Kerridge<sup>2</sup> says "Medical men dealing with deaf people have been hampered through lack of knowledge of acoustics and of facilities for carrying out a difficult research, necessitating an elaborate technique not used in other branches of medicine. Physicists and instrument makers interested in this subject have been handicapped on their part by insufficient information on the physiology and pathology of the ear." It is not within the teaching of medicine that acoustics belong.

A frequent reason for the otologists' distrust of hearing aids is that the whole subject has been in the hands of manufacturers, and patients recommended by the otologists to purchase an instrument found too often that they were not fitted properly. Thus the instrument was thrown aside to the disappointment of the patient and with a loss of prestige to the recommending otologist. It is not uncommon to see patients who have bought five or six hearing aids, all of which were discarded after a few weeks or months because they were not properly fitted or because the patient could not hear at all, lip reading being the only means of helping him. Of course he should never have been sold an instrument in the first place.

Acousticians and engineers discovered the basic principles of transmission of sound and its reaction on normal ears. These principles are only applicable, to a certain extent, to deafened ears, and experiments in sound transmission with impaired ears are scarce. The relationship of intensity and frequency to pitch, loudness, and perception of quality in ears with impaired hearing is not applicable to ears with normal hearing. A review of the

literature dealing with experiments on defective hearing apparatus by modern means of experimentation shows very little on the subject. Kerridge<sup>2</sup> says further "Until the optimum compensation for defective hearing has been worked out scientifically in a reasonable number of cases of different types and degrees, it will be impossible to forecast what amount of approximation to the ideal would suffice for most practical purposes."

Watson and Knudsen,<sup>3</sup> physicists, have made thorough tests with defective ears and have drawn certain conclusions from them. Taking the intelligibility of test words as a criterion, they tested the impaired ears with a series of differently adjusted amplifiers built to compensate their specific loss. They found among other important data that a hearing aid chosen by the deafened is not necessarily the best fitting one. "Until the patient becomes accommodated to the proper amplification, he almost invariably chooses as 'best' a 'peaked' amplifier or one which accentuates most of the frequencies he already hears best, and paradoxically he frequently says he hears poorly with an amplifier with which he actually hears best." This statement, based on experimentation, goes to show that the method of fitting a hearing aid by choice alone must be revised and more objective methods used in routine tests by a person who is trained in the new science of fitting hearing aids. Unfortunately, in many experiments detailed clinical conditions of the ears tested have not been stated. We feel that the pathophysiologic condition of impaired ears is of fundamental importance, and we classify hearing impairment into *four broad classes* with respect to the fitting. In practice there is seldom found a pure uncomplicated case, but in the majority of cases one of the four classes predominates.

*Class I* is the middle-ear conduction or middle-ear impedance hearing impairment. This is caused by impedance and distortion of sound waves by parts of the external or middle ear, including the foot plate of the stapes, and by no pathologic change beyond it. It is characterized by well-known symptoms—Weber lateralized to the more affected side, Rinne negative, bone conduction pro-

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examined later, it is merely a suggestion of further differential diagnosis in hearing impairment.

The best hearing aid for this second class of hearing impairment is a strong undistorted tube amplification with a receiver fixed to an individual mold.

The two other classes are also known as perceptive deafness. Their symptoms are different from each other, and they have to be fitted accordingly by different, adjusted hearing aids. Crowe, Polvogt, and Guild,<sup>12</sup> have pointed out important differences between gradual high-tone deafness and abrupt high-tone deafness. They link the latter with a degeneration of the organ of Corti, known as boilermaker's deafness, and the former with a degeneration of the nerve tissue.

*Class III* or abrupt high-tone deafness has as its principal symptoms the loud voice of the patient, men's speech better heard than women's, lateralization of the Weber test to the better side, Rinne positive, and bone conduction shortened. The audiogram shows an abrupt perception loss for high frequencies. It is assumed that the organ of Corti transforms the physical sound impulses into proper physiologic nerve impulses, therefore, when the organ of Corti is degenerated, this transformation cannot take place. A patient with this condition ordinarily asks for an instrument when the condition is developed to a point where the perception of higher frequencies necessary to the discrimination of speech is insufficient. By strong amplification of the higher frequencies the perception of them can be slightly improved, but this slight improvement gives an inordinate amount of intelligibility out of all proportion to this little improvement of perception in the high frequencies. The compensation derived from a hearing aid depends entirely upon the stage of the condition. A loss of perception beginning around the 2,000 cycle may be compensated fairly well, but a loss beginning around the 1,000 cycle makes the fitting difficult. The amplifier of the instrument should accentuate the high frequencies, and a crystal receiver fitted to an individual mold should be used. We would suggest for further development an even stronger suppression of the low frequencies in order to prevent them from masking the remaining high ones.

*Class IV* of hearing impairment is interesting because of its close relationship to recent research of the physiology and pathology of

the nervus cochlearis, the auditory nerve. It shows symptoms that can be due to an insufficiency of nerve tissue which conducts impulses from the organ of Corti to the higher centers. A short review of the results of neuro-otologic research will illustrate this relationship. It is assumed that the acoustic nerve follows the same principle in carrying impulses as other nerves. The function is characterized by the "all or none" law, which means that after every single transported impulse in a nerve fiber, a refractory period prevents the fiber from carrying another impulse in the interval. It is further assumed that the interval is the one thousandth of a second, in other words, a single nerve fiber of the acoustic nerve can carry 1,000 impulses per second. Again, the number of impulses to be carried by the nerve depends on the frequencies and intensities of the acoustic impulse. Every cycle is represented by an impulse—therefore, the higher the frequency, the more impulses. If a tone has more than 1,000 cycles, which is called the critical frequency, a single nerve fiber is not enough to carry it and a second fiber must help, it is called alteration. Higher tones must be carried by still more fibers, this is called rotation.

Furthermore, it is very probable that the number of active fibers increases in proportion to the intensity of the stimulating tone. It is clear from the above that tones of high frequency and great intensity constitute a higher duty for the nerve. It is important to realize that a certain number of nerve fibers is linked to a corresponding area of the organ of Corti. The nervus cochlearis or the acoustic nerve may be compared to a rope of nerve fibers emerging from a corresponding area of the organ of Corti. This means that impulses coming from low frequencies and high frequencies, respectively, will be carried by their corresponding nerve fibers. This discrimination has been traced in animals into the higher nerve centers. If the number of impulses to be carried is very high—as, for instance, stimulation by a loud noise—the transportation of these impulses needs a great number of nerve fibers. If the number of elements available is smaller than the need, as in the case of a partly degenerated nerve, the nerve becomes physiologically insufficient. What is the clinical picture of a patient suffering from insufficiency of the acoustic nerve? His voice is rather low, if asked whether he is hard of hearing, he will usually deny it, specifying his difficulty as a distortion of sound rather than a lack of

should be first fitted with a hearing aid and the actual gain in hearing established with the aid and later compared with the gain obtained through the operation

*Class II* may be called the inner ear conduction or impedance hearing impairment. I is caused by pathology of the hydraulic system of the cochlea. If, for instance, the membrane occluding the round window is rigid, the basilar membrane cannot move normally, although sound reaches the inner ear without any pathologic impedance of structures peripheral to it. In this condition the movement of the basilar membrane will be impaired no matter whether the sound is conducted to the inner ear by air or by bone. There may not be any pathology of the perceptive apparatus proper, but hearing will be impaired because of mechanical obstacles in the hydraulic mechanism of the inner ear. Although there are no routine tests to make differential diagnosis with respect to changes of the round window membrane, there are other changes in the hydraulic system which are accessible by proper testing approach.

Crowe<sup>7</sup> observed in many cases of impairment of hearing in Ménière's symptom complex the interesting fact that hearing fluctuates markedly in this condition. Hallpike and Cairns<sup>8</sup> link Ménière's symptom complex to a hydropic change of the ductus cochlearis based upon their histologic studies. Adams<sup>9</sup> calls this condition "glaucoma auris." Shambough, Jr.,<sup>10</sup> made a thorough study of diplacusis in describing 42 cases of different clinical conditions having this symptom. He could find diplacusis in Ménière's symptom complex, otosclerosis, otitis media, and many other conditions. He links this symptom also to hydropic changes of the endolymph and gives, in this same paper, a detailed description of the symptoms connected with the said changes. Incidentally Békésy<sup>11</sup> found the experimental explanation for Shambough's assumption. He studied the mechanics of sound transmission in the hydraulic system of the inner ear. He made a model of the cochlea, replacing the bony parts with metal and the basilar membrane with a thin rubber membrane, and observed through a glass window what happened inside the model when sound impulses moved a piston, replacing the foot plate of the stapes. He observed that two eddies developed in the scala vestibuli and tympani, respectively, pressing toward the basilar membrane. They changed their position according to the frequency with reference to the distance from the artificial

stapes. High frequencies produced eddies near the stapes and low frequencies produced eddies distant from it. He assumes that the basilar membrane includes physically the ductus cochlearis. Referring to the model, where not only the basilar membrane but also the ductus cochlearis and Reissner's membrane have been imitated, the author claims: "It can be demonstrated that the form of vibration of the basilar membrane is the same as before." He states furthermore that a change in the elasticity of the rubber membrane replacing the basilar membrane in the model is followed by a shift of the pairs of eddies toward the piston. He claims that "according to the frequency of the stapes, the eddy is located at a different position of the membrane. At low frequencies the eddy is near the helicotrema and at high frequencies near the stapes. With constant frequency of the impulse anticipated, the eddy is nearer the stapes if a thicker membrane rather than if a thinner one is used. Because of the great amount of absorption of water by the rubber membrane, the elasticity of it decreases with time. In this case also the eddy moves toward the starrup bones." If Shambough could demonstrate that the pitch, in almost all cases, was higher in the more affected ear, he would prove the clinical observation for Békésy's experiments.

The striking correspondence between the results of Békésy's experiments and Shambough's clinical observations testifies to the validity of both assumptions. We could find in cases where we assume pathology of the hydraulic system that very loud tones of the audiometer do not produce any disagreeable sensation. Cases giving a history of hearing impairment after diseases involving even the slightest meningeal participation may arouse suspicion for pathology of the ductus cochlearis. The excretion of the endolymph takes place from the saccus endolymphaticus, which is located in the aqueductus vestibuli between two layers of the dura mater, surrounded by loose connective tissue with rich vascularization. When you consider this fact, a meningeal inflammatory process can easily alter the biologic conditions around the saccus endolymphaticus. It has been noted by authors that a hydrops of the ductus cochlearis is frequently associated with a substitution of the mentioned loose connective with scarlike tissue with poor vascularization. It should be pointed out here that there is not sufficient evidence of cases being properly tested and histologically

lasting disturbing effect on the succeeding words

Often the question arises as to which ear should be fitted. There is a difference of opinion as to whether one should fit the better ear, the worse ear, or both ears. It seems that this cannot be anticipated. There are different factors to be considered, pure psychologic and physiopsychologic. If the patient hears much better with both ears than with either ear alone, it will be better to fit the poorer ear. On the other hand, if the patient hears with one ear and complains of difficulty in hearing, this ear should be fitted. The discrimination as to whether the patient hears binaurally or monaurally is quickly decided by the intelligibility test. In some cases it seems to us that binaural fitting would give the optimum improvement, but the resistance on the part of the patient is far greater in practice than generally supposed. It is very difficult to convince the patient of it.

Testing procedure as adopted by us is as follows. When a detailed history of the patient has been obtained, the patient's ears are examined and the clinical condition is established. The routine test with a tuning fork of 256 cycles is taken. Next is the audiometric test of both air and bone conduction. Not only the sensation of threshold intensities is of interest but the reaction of the patient to higher levels of intensity. The patient is questioned about the quality of the sounds he hears, the description may be that of a pure tone or a rough tone. A pure tone of low intensity may become one of rough quality at high intensity. We desire to know whether the patient can discriminate pitch.

One of our patients, for instance, gave a fair and definite reaction for threshold intensities, but, on being questioned as to what he heard, he described the tones as "low and high whistles." Yet he denied decisively that he could discriminate pitch. He was a professional musician and knew, therefore, exactly what the meaning of the sensation of pitch was. He came to us asking for a hearing aid to give him that sensation. Of course we could not help him. Incidentally, this case is of great theoretic interest because it proves that there may be intelligibility of speech without any discrimination of pitch.

In addition it suggests theoretic considerations about the function of the organ of Corti. The patients are also examined for diplacusis. This is a difficult test, as the average patient cannot discriminate exactly the different qualities of sensation comprised

in hearing. Then follows the intelligibility test based on principles described by Fletcher and Steinberg. It consists in calling numbers, sentences, and syllables under standardized conditions. The reading back of the syllables is of importance, as it is a double check for the perception. Taking the history and the various tests into consideration, one may assume the predominance of one of the four classes described. Accordingly, some one of the available instruments would have the best characteristics of performance to fit the case. The intelligibility test is repeated with the instrument on. The decision in recommending an instrument depends on the result of the intelligibility test. Complete testing takes about an hour, and frequently the patient is asked to come back for another examination. Examinations of this kind are very often fatiguing to the patient and cannot be completed in one sitting. There are two rooms used in testing. One room has a high reverberation and a medium background noise level and has a distance of calling about 20 feet, its testing conditions being similar to the living conditions of the average patient.

The other room is constructed for the special purpose of low reverberation. In it is the audiometer and a loudspeaker connected over an amplifier with a phonograph and a microphone, respectively. The latter arrangement may be used for tests under different noise level conditions and other tests not made in routine practice. In calling tests, the human voice is preferred to phonograph reproduction, the former being more natural. We consider the above described testing the minimum requirement for a conscientious fitting of a hearing aid. If possible, a trial of the instrument is allowed the patient at a place where it is most desired.

Modern hearing aids consist of a radio-tube amplifier, a microphone and a receiver, and a battery arrangement to supply the electric current. It should be as small as efficiency will permit. The amplification should be undistorted or of prescribed distortion. There is a certain minimum requirement of parts in an amplifier that does perform correctly. Parts require space, and the instrument becomes larger. The amplifier works more efficiently and economically with batteries of higher voltage. It is a real art on the part of the manufacturer to compromise with the two requirements, a small instrument and an efficient one. A very important problem is the choice of the receiver. The most common are the crystal,

sound Typical answers are "I understand conversation very well in a quiet room if only one person speaks" "I hear well but I do not understand speech in a noisy place"

Discrimination of speech in auditoriums or in rooms with high reverberation is more difficult for a patient with this type of deafness than for any other Also the background noises, i e, those not connected with speech, mask the usable noises, i e, those connected with speech, more for this patient than for any other type The tuning fork test is characteristic for perceptive deafness, but it will be noted that the patient complains of a disagreeable loudness from a heavily struck tuning fork of 256 cycles, applied by air conduction The same intensity would not be disagreeable for a normal ear The audiogram shows, as pointed out, a gradual loss of sensitivity with increasing frequency The threshold of sensitivity of these patients is not so important as the reaction to tones above the threshold With increasing intensity some patients will note a change of quality of the tone, which becomes rough, and the loudness will soon be disagreeable Interesting observations have been made with the tube-amplifier aid The amount of amplification can be regulated in such a way that when the patient tries it, and turns the aid on a very little, often the following remark will be made "The voice sounds natural but I cannot understand because it is not loud enough"

When the aid is turned on a little more the patient may understand better, but he is not satisfied with the quality He claims that the speech sounds distorted and that a further increase of amplification changes the intelligibility of speech for the worse The patient becomes embarrassed and removes the earpiece Taking into consideration that commercially available hearing aids do not give undistorted stronger amplification, the test was made under better conditions of amplification, and the same reaction of the patient took place The degree of amplification of background noises is of importance in such cases Discussing this picture of nerve insufficiency, one should take into consideration that the nerve usually does not degenerate uniformly, meaning that a certain number of normal functioning nerve elements is present in the degenerating nerve It is probable that the patient hears speech "like music," only as long as the normal nerve tissue is "busy" It is also probable that only normal

nerve tissue can carry sound from the end-organ undistorted to the higher centers

With increasing loudness there will be an increasing demand for nerve tissue Slightly degenerated fibers are different in their biologic reaction, although they are still able to carry out their function Impulses from the endorgan which cannot be transported by normal tissue will be forced to make a slightly degenerated nerve element "busy," and distortion will result Further increase of the number of impulses generated by higher intensity will engage more of the degenerating fibers, and the relationship between busy normal and busy abnormal fibers will soon be in unfavorable proportion for the intelligibility of speech The intensity of sound has to be adjusted between the Scylla of insufficient loudness for proper reception of speech and the Charybdis of distortion due to increased intensity In discussing the principles to be applied in fitting this type of hearing impairment, the first aim will be to protect the nerve from getting too many impulses Second, most of the impulses should be generated from the noise created by voice, excluding background noises as much as possible Hearing aids for these cases should provide more protection from noise than amplification of sound A smooth instrument connected with a crystal receiver and an individual earpiece are recommended The volume should be turned on as little as is required for the understanding of speech

So-called automatic volume control used in some aids prevents sound having a greater intensity from being amplified in the same proportion as sounds of lower intensity This arrangement of specific intensity amplification is advisable for this group Interesting tests have been made showing that there may be considerable amplitude distortion of speech noises without hampering the intelligibility Again these experiments were made on normal ears, and it is a matter of research to establish the appropriate selective frequency and intensity amplification for the deaf ears Special attention should always be given to the low frequencies An economic use of low frequencies would minimize the masking effect In addition, low frequencies are more reverberant in large auditoriums than the middle or high frequencies, thus, a part of the background noise may be eliminated Clicks and sudden noises are a particular nuisance for patients with nerve insufficiency They prevent understanding of speech during their appearance and have a kind of

# PERIODONTIA IN INTERNAL MEDICINE

## Periodontal Disease, Its Importance as a Focus of Infection and the Possibilities of Treatment

SAMUEL CHARLES MILLER, D D S , F A C D , and ALLAN N ARVINS, D D S , New York City

IN THE search for foci of infection the physician is frequently confronted with the problem of dental conditions that may be responsible factors. Too often lesions of a serious nature are completely missed because of their lack of radiographic evidence, although they may be extremely important foci from which absorption of bacteria and their toxins takes place.

There is still a strong trend toward condemnation of nonvital teeth, even though properly filled. Yet, it has been shown upon histologic examination of some extracted nonvital teeth that the cementum or bone continuous with the alveolar process has completely closed the apical foramen and that the surrounding tissue is entirely free from inflammation.<sup>1</sup>

Although the literature on the subject is meager, the following reasons substantiate the authors' opinion that the danger from periodontal foci (pus pockets, gingivitis, etc.) is much more potent than that from periapical disease.

1 A much greater zone is involved than in a periapical abscess, considering the total surface area of the walls of all of the pockets. It can safely be stated that at least twenty times the absorption surface is involved in an average case of periodontal disease than in a well-developed chronic periapical abscess.

2 Absorption from the gingival crevice is more rapid, since the blood and lymph supply to the gingivae is much greater than to a periapical area in bone, especially when the latter is surrounded by even a slight degree of condensation.

Cogan<sup>2</sup> states "The richness of bacterial flora under the gingival crevices, with large areas of inflammation (having more blood vessels directly in contact with the infection), facilitates entrance of the bacteria into the circulation in sufficient numbers to produce infection."

Round, Kirkpatrick, and Hails<sup>3</sup> have shown that the force of mastication is sufficient to pump bacteria and their toxins into the blood stream.

Rosenow<sup>4</sup> reports "Elective localization of streptococci isolated from pyorrhea pockets occurred commonly following intravenous injection, thus emphasizing the importance of periodontoclasia as a focus, and steps to correct this most common of evils should be taken."

3 Resistance to bacterial growth is lower in the gingival crevice than anywhere else in the oral cavity because of stagnation and food accumulation.

The zones of greatest susceptibility in the mouth have been studied by Stuart, Knudson, and Arnold,<sup>5</sup> who report that "the lips, gums, and tongue seem to have an inexhaustible supply of bacteria, both in numbers and in strains. There is little if any spread of transient bacteria from the lips, gums, and tongue when the mouth is held in an almost fixed position, but with mechanical movements of the cheeks and tongue these organisms rapidly travel, primarily backward towards the throat and pharynx."

Billings<sup>6</sup> states "the strains of streptococci which apparently cause chronic deforming arthritis and myositis grow best in a low oxygen tension, and even grow anaerobically." The depths of gingival crevices and periodontal pockets offer an ideal incubation zone for these types of organisms.

It thus becomes imperative that any complete search for foci of infection include attention not only to radiographically evident lesions at the apices of teeth but should encompass, with even more care, the radiographic study of the alveolar margin for activity of bone destruction, as well as a thorough clinical examination for gingival disturbances which may possibly not as yet have affected the bone structure.

The amount of bone loss is not so significant to the periodontist as the type of bone which remains, for this determines the activity of periodontal disease. One of us (S C M) has classified the alveolar bone in periodontal disease for ease of diagnosis as follows:

1 *Normal Alveolar Support*—The alveolar process is of even density throughout. There is an even distribution of light and dark shadows (the cancelli and medullary spaces of alveolar bone). The crest of the alveolar wall

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the magnetic, and bone-conduction receivers

The latter may often be replaced with advantage by a magnetic air receiver, which is connected with an individual ear mold made from lucite or other plastic material. As pointed out, the amount of sound conducted to the ear by bone seems to be high by this arrangement. We do not doubt that the construction of the magnetic receiver will be of importance for the future development of hearing aids. Crystal receivers are built on the principle of the piezo-electric effect of Rochelle salt crystals. They are advantageous in cases where reproduction of high frequencies is most desired. They are light in weight, have smooth reproduction of sound, but are not stable under hot climatic conditions. Although the principle of all radio-tube amplifiers is the same, the characteristics of performance of every make and even of every instrument is different. It is, therefore, of importance to the acoumetrist to have available as many instruments as possible in order to give the best fitting.

The patient should be encouraged, after he has acquired a suitable hearing aid, to make use of lip reading, which he has consciously or unconsciously acquired through the years of his deafness. In those cases that cannot be fitted, where the patient is beyond relief by an electrical instrument, speaking tube, or horn, lip reading is the best and often the only means of communication with the outside world. Leagues for the hard of hearing, which are established in most cities, give much of their time and effort to teaching lip reading on a charitable basis. The teaching of lip reading is a profession in itself which is best taught in one or other of the lip reading schools in the country or by private teachers in the art.

Organic changes represent only a part of the complex problem of the hard of hearing, and psychologic experience is an important pre-

requisite in dealing with these patients. But it should be borne in mind that it is the duty of every acoumetrist to crystallize all organic changes as clearly as possible. Only on their knowledge can the best fitting be provided.

### Summary

An attempt is made to classify hearing impairments into four classes for the purpose of fitting hearing aids. The classification is made on the basis of physiology and pathology of sound transmission and sound perception. Although isolated forms are rather rare, one of the classes of hearing impairment is usually predominant in every ear with abnormal function.

There are certain characteristics of amplifiers and receivers which are better suited for any of the classes of impaired hearing.

The importance of the type of the receiver is stressed.

It is pointed out that the fitting of deafened and hard-of-hearing patients can be done only by specialized persons. Acoumetrists should be trained and licensed just as optometrists are.

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### STRUGGLE ENDS

Friend "I'm told your daughter has made up her mind to marry a struggling young doctor."

Father "Well, if she has made up her mind, he might as well stop struggling."—*Medical World*

### YANKEE DOCTEE YANKEE OUTEE

Chinese patient (on telephone) "Doctee, what time you fixee tooth for me?"

Doctor "Two-thirty all right?"

Chinese "Yes, tooth hurty all right, but what time you fixee?"—*Medical Record*

### BUT BOTH RATHER BOSSY?

The gum-chewing girl and cud-chewing cow. Are sometimes alike, yet different somehow. What is it? Oh, yes we see it all now.

It's the thoughtful look on the face of the cow.

—*Exchange*

### DOCTORS ARMED TO THE TEETH

Beginning with the fall of 1941, Harvard University will inaugurate a new five-year course in its renamed School of Dental Medicine. Graduates in this new course will receive both the M.D. and D.M.D. degrees.



FIG 5 Radiograms illustrating rapid bone destruction—(a) anterior region, (b) posterior region

#### B—Underfunction.

- 1—Nonocclusion.—Two or more opposing teeth do not make contact with each other in any of the excursive relations
- 2—Premature wear.—The morsal surfaces are worn too rapidly either through a coarse food diet, an acid decalcifying environment, or improper artificial shaping of the teeth or restorative procedures. In such cases the periodontium does not receive sufficient functional stimulation through pressure on the cusp inclines in chewing

#### C—Abnormal habits

- 1—Unilateral mastication.—This may be initiated by a painfully erupting third molar, a missing tooth, a sensitive cavity or some inefficiency of the teeth on one side, creating a habit of chewing on the other side. The result is loss of tissue tone and disease of the insufficiently used side.
- 2—Abnormal biting habits.—The biting on foreign objects or materials for which the teeth are not intended, e.g., fingernail-biting, pencil-biting, lip-biting, thread-biting, etc

#### II—Irritational

##### A—Calculus

- 1—Supragingival (salivary)
- 2—Subgingival (serumal or serumal)

- B—Improper toothbrushing.—Vertical, rotary or crossbrushing can produce gingival disease. Massage of the gum tissue by the toothbrush, improperly performed, not only is of no value but often is damaging

##### C—Food impaction.

- 1—Vertical.—The forceful wedging of food against the gum tissue by chewing pressure
- 2—Horizontal.—The pressing of food into the spaces between the teeth through the action of a powerful tongue or by buccal and lip pressure when the vestibule is narrow or when the teeth are improperly arranged.

- D—Effect of cavity margins, improper inlay or filling margins, orthodontic appliances, or bridges or dentures which impinge upon or irritate the gingivae.



a



b

FIG 6 Untreated case of rapid type of bone destruction, woman, aged 46—(a) appearance of septal bone at time of original examination predicting rapid dissolution of process (May, 1938), (b) eight months later (January, 1939), extreme loss of bone necessitating extraction of involved teeth.

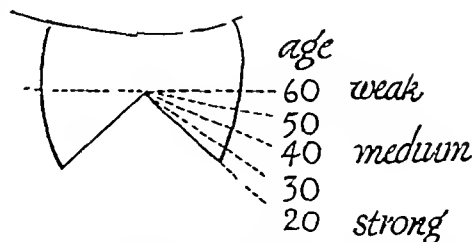


FIG 7 Diagram showing relationship of cusp height to age and strength of tissue support

- E—Nondetergent diets—accumulation of pasty foods on the teeth.

- F—Mouthbreathing—drying of oral mucosa

#### III—Systemic

- A—Debilitating diseases such as tuberculosis, syphilis, leukemia, agranulocytosis, nephritis.

- B—Dietary and nutritional deficiencies

- 1—Acid-base disbalance.
- 2—Mineral deficiencies calcium, phosphorus, potassium, iron, etc.
- 3—Vitamin deficiencies



FIG 1 Radiographs illustrating normal alveolar support—(a) anterior region, (b) posterior region



FIG 2 Radiographs illustrating marginal thickening of the periodontal membrane indicating inception of periodontal disease



FIG 3 Radiographs illustrating arrested bone destruction—(a) anterior region, (b) posterior region



FIG 4 Radiographs illustrating slow bone destruction—(a) anterior region, (b) posterior region

is protected by the lamina dura which surrounds it and dips down to line the alveolus, leaving a thin dark line or space occupied by the periodontal membrane (Fig 1). At this time, radiographically, there is no suspicion or prediction of disease.

**2 Marginal Thickening of the Periodontal Membrane Line with Thinning of the Periodontal Lamella or Lamina Dura (Fig 2)**—This indicates the beginning of periodontal disease and will enable the observer to predict by five years the actual clinical appearance of the disease. It is the radiographic equivalent of rarefying pericementitis fibrosa as described histologically by Box.<sup>8</sup>

**3 Arrested Bone Destruction**—The bone crest is at a lower level than normal, but the alveolar bone is of even texture throughout, presenting the same density up to the margin of the bone. The height is dependent on the amount of destruction that has previously occurred. If destruction is arrested for some time, there is a new, dense, white line over the remaining crest of the alveolar process which continues to form the periodontal lamella or lamina dura (Fig 3).

**4 Slow Bone Destruction**—The level of the bone crest may vary and is not an important consideration in determining the rapidity of bone dissolution. When the periodontal lamella is absent over the alveolar crest and

there is a darkening of the alveolar process penetrating only a short distance into the bone septum, it may be considered that a slow destructive process is under way. Beyond the shallow area of penetration, the remaining alveolar process is of uniform density (Fig 4).

**5 Rapid Bone Destruction**—In this situation the periodontal lamella or lamina dura is already destroyed, and there is a gradual darkening of the alveolar bone, increasing toward its present crest. The bone gradually fades into the darkness of the soft tissue covering it. The greater the depth of penetration of this shading into the alveolar process and the more gradual the diffusion from the darkened area to the lighter structure of normal bone, the more rapid the decalcifying process (Figs 5 and 6).

Periodontal disease is primarily dysfunctional in origin, the disturbing factors producing a "locus minoris resistentiae." From a practical point of view, the etiologic factors may be grouped as follows:

#### I—Functional

##### A—Overfunction.

##### Occlusal trauma

- 1—Excessive stress on teeth.
- 2—Insufficient periodontal support.
- 3—Too powerful masticatory musculature



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#### B—Underfunction.

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- 2—Abnormal biting habits.—The biting on foreign objects or materials for which the teeth are not intended, e g, fingernail-biting, pencil-biting, lip-biting, thread-biting, etc

#### II—Irritational.

##### A—Calculus

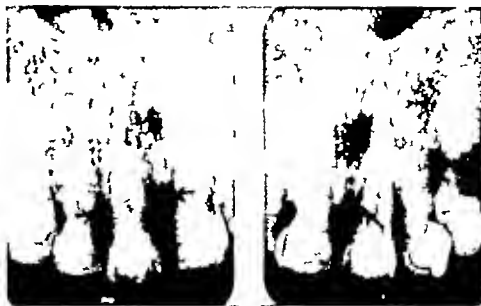
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- 2—Subgingival (seruminal or serumal)

- ##### B—Improper toothbrushing
- Vertical, rotary or crossbrushing can produce gingival disease. Massage of the gum tissue by the toothbrush, improperly performed, not only is of no value but often is damaging

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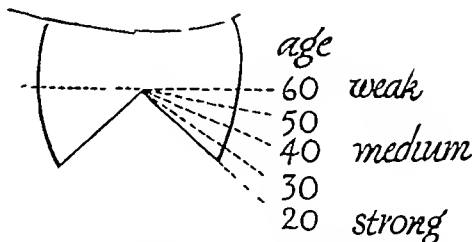


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FIG 1 Radiograms illustrating normal alveolar support—(a) anterior region, (b) posterior region



FIG 3 Radiograms illustrating arrested bone destruction—(a) anterior region, (b) posterior region

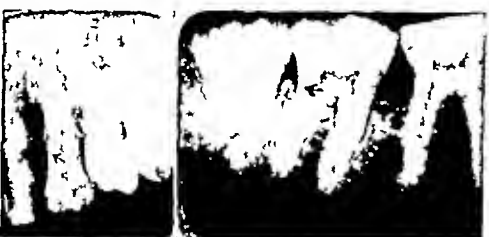


FIG 2 Radiograms illustrating marginal thickening of the periodontal membrane indicating inception of periodontal disease



FIG 4 Radiograms illustrating slow bone destruction—(a) anterior region, (b) posterior region

is protected by the lamina dura which surrounds it and dips down to line the alveolus, leaving a thin dark line or space occupied by the periodontal membrane (Fig 1). At this time, radiographically, there is no suspicion or prediction of disease.

**2 Marginal Thickening of the Periodontal Membranes Line with Thinning of the Periodontal Lamella or Lamina Dura (Fig 2)**—This indicates the beginning of periodontal disease and will enable the observer to predict by five years the actual clinical appearance of the disease. It is the radiographic equivalent of rarefying periodontitis fibrosa as described histologically by Box.<sup>8</sup>

**3 Arrested Bone Destruction**—The bone crest is at a lower level than normal, but the alveolar bone is of even texture throughout, presenting the same density up to the margin of the bone. The height is dependent on the amount of destruction that has previously occurred. If destruction is arrested for some time, there is a new, dense, white line over the remaining crest of the alveolar process which continues to form the periodontal lamella or lamina dura (Fig 3).

**4 Slow Bone Destruction**—The level of the bone crest may vary and is not an important consideration in determining the rapidity of bone dissolution. When the periodontal lamella is absent over the alveolar crest and

there is a darkening of the alveolar process penetrating only a short distance into the bone septum, it may be considered that a slow destructive process is under way. Beyond the shallow area of penetration, the remaining alveolar process is of uniform density (Fig 4).

**5 Rapid Bone Destruction**—In this situation the periodontal lamella or lamina dura is already destroyed, and there is a gradual darkening of the alveolar bone, increasing toward its present crest. The bone gradually fades into the darkness of the soft tissue covering it. The greater the depth of penetration of this shading into the alveolar process and the more gradual the diffusion from the darkened area to the lighter structure of normal bone, the more rapid the decalcifying process (Figs 5 and 6).

Periodontal disease is primarily dysfunctional in origin, the disturbing factors producing a "locus minoris resistentiae." From a practical point of view, the etiologic factors may be grouped as follows:

#### I—Functional.

##### A—Overfunction.

##### Occlusal trauma

- 1—Excessive stress on teeth.
- 2—Insufficient periodontal support
- 3—Too powerful masticatory musculature



FIG 8 (c) After five visits consisting of subgingival curettage, advice on diet and toothbrushing and, when the hypertrophy receded, balancing of the occlusion. Note that spaces between teeth have reduced markedly (d) Lingual view as shown in Fig 8(b) after five visits. Note improvement without surgery

ing rules for choice of procedures have given greatest benefit in our hands

a *Surgical Gingivectomy* (removal of affected tissues, e g, Ward, Black technics, electrocoagulation, etc) —This procedure should be resorted to only on lower molars in exceptionally well-kept mouths, when the bifurcations are involved by the infective process and it is necessary to save these teeth for attachments of bridges or to preserve arch continuity

b *Conservative Surgery* (exposing the affected area for access and returning the overlying tissue to place after the operation, e g, flap operation and Kirkland, Hoffer technics) —These procedures are of advantage in instances where access to the pocket cannot be obtained with conservative treatment. These are the tortuous pockets and those widening out greatly at the fundus. A button-hole incision is often sufficient for these cases and avoids the possibility of marginal recession. This is made vertically over the deeper part of the pocket to about 4 mm. from the gingival margin. The deeper part is curetted through the incision, and the superficial part is curetted through the marginal crevice. Thus, no recession is produced

c *Conservative Subgingival Curettage* —This is the procedure of choice because of the possibility of reattachment and a return to the normal gingival contour. There is little loss of tissue and the performance of the operation produces minimum discomfort, local anesthesia is rarely needed. The operator must become skilled in the manipulation of curets and deep pocket scalers, but this dexterity can be developed with



FIG 9 (a) Mouth of woman, aged 38, showing very poor gingival tone with irregularity of gingival margin. Note upper left lateral incisor in linguoversion and the unesthetic form of the teeth. (b) Same case after treatment. Note improved tone and regularity of gingival festooning. The upper left lateral incisor is practically in line due to healing without any resort to orthodontic procedure. Also note the improved form of the teeth. Conservative treatment was employed

practice by anyone capable of successfully performing other branches of dentistry

### Summary

1 Periodontal disease is a more potent focus of infection than periapical disease

2 The presence of periodontal disease may be predicted radiographically several years before its actual clinical appearance

3 An original classification of alveolar types revealing the activity of bone destruction is presented

4 The etiologic factors of periodontal disease are known. Rarely, if ever, is a single factor responsible

5 Periodontal disease can be cured, and the state of health thus produced can be maintained

6 Procedures in successful treatment of over 15,000 cases are presented



FIG 8 (a) Hypertrophic gingivitis, before treatment—boy, aged 17 Note spreading of teeth due to pressure of hypertrophied tissues The teeth cannot occlude because the enlargement of the gum tissue on the lingual of the upper anteriors makes contact with the lower anteriors (b) Lingual view, same case, showing hypertrophy which kept the upper and lower teeth from making contact.

C—Endocrine disturbances

D—Allergies and idiosyncrasies manifested in the periodontal tissues

E—Nervous disorders

- 1—Sympathicotonia or parasympathicotonia (vagotonia) may be responsible for disturbance in local blood supply
- 2—Interference with absorption and assimilation of necessary dietary agents, e g , minerals, vitamins
- 3—Neurotrophic disturbance, interfering with the nutrition of the periodontal tissues
- 4—Bruxism (rubbing of teeth together during sleep) and bruxomania (habit of gritting teeth)<sup>10</sup>

Since bacteria are secondary factors in the production of periodontal disease, the use of vaccines, antiseptics, and germicides have little influence in periodontal treatment. However, autogenous vaccines derived from organisms taken from the periodontal pockets may be of great benefit in the treatment of related systemic disturbances after the local disease has been eliminated (Vaughan<sup>11</sup> and Burbank<sup>12</sup>).

At the present stage of development of periodontology it may safely be stated that periodontal disease is curable. An editorial in the *Journal of the American Dental Association* of August, 1935, states "The most surely fatal edict that has ever been permitted to go out in connection with this subject is to the effect that 'pyorrhea cannot be cured' Of course it cannot be cured, provided the disease has gone so far that the tissue around the tooth has nearly all been destroyed and the hapless member is left prone and wobbling, without maternal support of any kind in a mass of flabby and unregenerate tissue. Miracles are not performed in this latter day,

though the manner in which teeth tighten and become firm and serviceable when the cause is discovered and the proper remedy applied surely borders on the miraculous."

The following procedures have been found successful in the treatment of over 15,000 cases in clinic and private practice by members of the Periodontia Department of New York University College of Dentistry.

1 The primary procedure is the restoration of functional coordination of the teeth in such a way that stresses are evenly divided and that there is no strain in any of the excursive movements. This is usually done by shaping the teeth to their proper functional form by means of a carborundum stone. In some cases where teeth have been excessively worn, it may be found necessary to rebuild one or more of the posterior teeth by means of onlays and even, on occasions, to construct porcelain jackets for the anterior teeth. In young individuals, orthodontia may be beneficial. In some instances the combination of grinding certain teeth and placing restorations on others is necessary. Orthodontia, when performed on adults, should always be followed by the shaping of the teeth to conform with the patient's age-form according to functional requirements (Fig 7).

2 Attention must also be given to the possibility of dietary deficiencies or systemic diseases which may be causing or complicating the local disease. It is in this field that most can be gained from medicodental cooperation.

The direct local requirement of a fibrous, detergent diet is of equal importance to the mineral, vitamin, and other fundamental dietary requirements for oral health.

3 Elimination of the pocket The follow-

# THE ORGANIZATION OF AN ARTHRITIS CLINIC

With Special Reference to the Arthritis Clinic at the Hospital  
for the Ruptured and Crippled, New York City

R. GARFIELD SNYDER, M D , F A C P , and CORNELIUS TRAEGER, M D , F A C P ,  
New York City

UP TO thirty years ago there were no special arthritis clinics in America—at least there is no record of one. Apparently the first in this country was established by Dr. Ralph Pemberton in 1911, in conjunction with Miss Frances Hostetter, at the Presbyterian Hospital in Philadelphia.

The first arthritis clinic in New York City was established by Dr. Reginald Burbank at Cornell University in 1917. Dr. Burbank established another clinic at Bellevue Hospital in 1919, and Dr. Russell Cecil took over the Cornell clinic. In 1924 one of us (R. G. S.) established the arthritis clinic at the Hospital for the Ruptured and Crippled. There is no authentic information about the number of these clinics existing in America, but there are probably many small ones that are not officially known, as only the relatively large clinics have the facilities for obtaining accurate scientific data suitable for publication.

As evidence of the rapid development of interest in arthritis in New York City during the past twenty years, a recent survey, made by the Committee on Arthritis of the Welfare Committee of the City of New York, has shown that there are twenty-one special arthritis clinics in Manhattan and the Bronx and six in Brooklyn. At the present time, New York City and Boston lead other cities in the number of these clinics.

Arthritis clinics are variously located in university hospitals, general hospitals, and in orthopedic hospitals—each with its certain advantages and disadvantages.

University hospitals usually offer a better opportunity for conducting chemical research and animal experimentation, which is essential for determining the therapeutic as well as the toxic properties of the different forms of treatment. These university clinics are, therefore, of great importance in advancing our knowledge of the scientific indications and contraindications in the treatment of the disease. Unfortunately, there are relatively few university hospital clinics in the country, and they care for only a small percentage of the total number of patients needing treatment. In the second place they often restrict

their investigations to the forms of arthritis that happen to interest the full-time workers or investigators who control the policy of the clinic. All other forms of arthritis are apt to be eliminated from consideration or referred back to the general medical clinics for treatment. This policy is hardly fair to the patient suffering from one of the many other forms of arthritis, and the practice of restricting the admission of patients to only one form of arthritis cannot but narrow the practical experience as well as the perspective of the men working in the clinic.

An arthritis clinic located in a class A general hospital has many obvious advantages. There are many more general hospitals than either university hospitals or orthopedic hospitals. The general hospital has a large staff of specialists and internists, which makes possible a thorough study of each case. Unfortunately, not all well-trained internists are interested in the arthritis problem and, therefore, are not well qualified to treat arthritis patients.

An arthritis clinic located in an orthopedic hospital has certain advantages over the arthritis clinics located in either university or general hospitals, because every arthritis patient is potentially or actually an orthopedic problem and, therefore, requires the closely coordinated efforts of both the internist and the orthopedic surgeon.

It is our opinion that the ideal location for an arthritis clinic is in an orthopedic hospital, because of its well-equipped laboratory, x-ray, and physical therapy departments, the latter department being an essential component of any good arthritis clinic.

In the early stages of arthritis, deformities can often be prevented by taking the advice of the orthopedic surgeon on the use of the proper appliances. In still other cases orthopedic measures give support to weakened structures or otherwise overcome abnormalities causing some of the arthritic symptoms. In the later stages orthopedic surgery can often improve marked deformities so that the patient regains some degree of use of the limb.

It is true that a university clinic or a clinic

## Conclusions

1 The physician should be more familiar with the periodontal problem and its association with systemic disease

2 Closer medicodental cooperation is necessary for the most efficient control of this disease

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## Announcement—Change of Address

It is urgently requested that when members make permanent changes of address they notify

- 1 Secretary of the County Society
- 2 This office of the State Society—292 Madison Avenue, New York City
- 3 Director of the Division of Professional Education, Mr Charles B Heisler, State Education Dept., Albany, New York, who has charge of reregistration

Prompt action will help the county societies, will save payment of forwarding postage for the NEW YORK STATE JOURNAL OF MEDICINE, and will keep up to date the list of registered physicians maintained by the State Education Department. It will obviously be to the interest of the physicians concerned.

From Mr Heisler has come in the following request, which applies not only to the members but to all the physicians registered in the state, nonmembers as well as members

*"Dear Dr Irving*

*"With the information that we receive we do all that we can to keep up to date our address list of registered physicians. Nevertheless we find each year that many of the addresses are incorrect because we have not received notice of a change in his address that a physician has made. I fully realize that physicians are quite unaware that notice of a change of address is important to us, unless they are specifically advised to that effect.*

*"I wonder whether you would be willing to insert a notice in the NEW YORK STATE JOURNAL OF MEDICINE to the effect that it will be of much help to us in carrying out annual registration with the minimum of trouble to them and in sending them the printed list of registered physicians, if each of them will be good enough to let us know whenever he changes his address.*

CHARLES B HEISLER"

Peter Irving, M.D., Secretary  
292 Madison Avenue, New York City

in a general hospital often has an orthopedic surgeon on its staff, but his services can hardly compare with the collective experience of a whole orthopedic service as found in an orthopedic hospital

Most orthopedic hospitals occasionally call in a consulting staff for their nose and throat, dental, gynecologic and urologic services. We know from experience that the only way to obtain proper examinations in an active arthritis clinic is to have the required specialists appointed to the staff of the arthritis clinic and have their hours coincide with the hours of the clinic. Only such a well-knit, closely regulated clinic produces the best results

It is, of course, essential that the various specialists who examine arthritic patients keep in mind that these people may have no complaints referable to their specialties. Therefore, their search for foci of infection should be more careful than in patients who present themselves to these specialists with more obvious pathology. The experience that these specialists acquire in examining these patients and talking over the relative importance of foci of infection with the internists on the staff of the clinic eventually makes for much better judgment on the part of both the internists and the specialists in the handling of these cases

The Arthritis Clinic at the Hospital for the Ruptured and Crippled, started in 1924, was one of the first to initiate the scientific study of all forms of arthritis. At first the staff of the clinic consisted only of one of us (R. G. S.) and a secretary. During the past sixteen years it has gradually developed, until now there is a staff of twenty-five physicians and nine nonprofessional assistants. The growth of this clinic is proof that it is possible to establish an efficient clinic in any class A hospital in America, providing the hospital is located in a relatively large city. A detailed description of this clinic follows, for we believe that its organization may interest those considering the establishment of an arthritis clinic

### Details of Organization of the Clinic

It is obvious that the chief of the clinic should be well trained and have a wide experience and deep interest in the disease. In addition to medical qualifications, organizing ability is important. The duties of the chief of the clinic and also those of his associate include going over each case carefully after it has been worked up and deciding in

consultation with the physician in charge of the case the best form of treatment to employ. Later, if the patients are not satisfied with the treatment they are getting, it is their privilege to take their complaints directly to the chief of the clinic or to the associate chief. In a well-organized clinic, complaints of this type are only rarely encountered

Next in importance in the arthritis clinic is the caliber of the medical staff, whose duty it is to examine the patients and carry out the treatment. The medical men should be not only well-trained internists, deeply interested in the study of arthritis, but their personalities must be adapted to the care of patients who suffer from a chronic disease that makes them introspective and sensitive

It is important that all members of the staff attend the clinic regularly and remain throughout the entire two-hour session. Staff conferences are held at regular intervals during the year for discussion of cases and clinic problems

In the clinic we accept all patients who suffer from some form of arthritis or any of its allied conditions. In general, this includes all cases commonly described as rheumatism

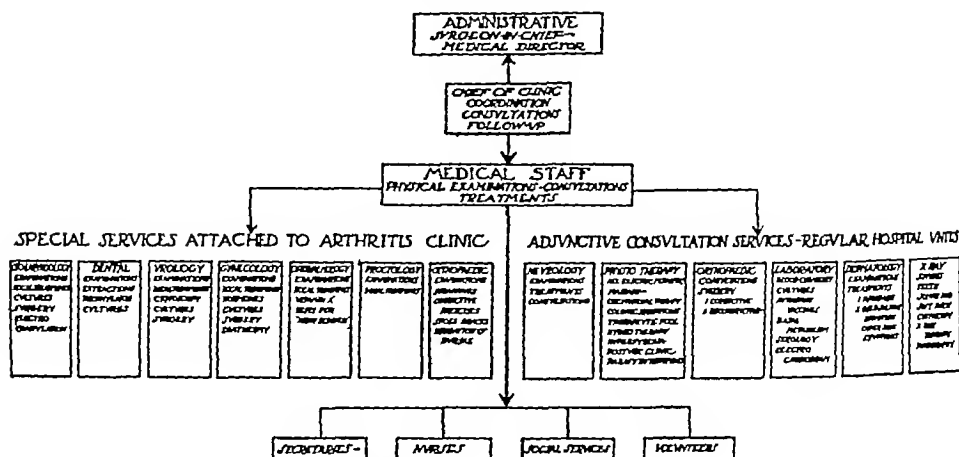
We have found it important to limit the number of admissions to the clinic. An unduly large attendance necessitates hasty examinations, curtails the service which should be rendered each case, and results in ineffectual care. It has been found from experience that one man can care for about 2 new patients and 10 old patients in a clinic period of two hours

The chief of the clinic or a physician designated by him passes on the eligibility for admission of the patient and has the privilege of refusing patients he considers unsuitable for treatment. Regular attendance of patients is essential to their proper care. Patients referred for opinion only are not enrolled on the active list. An appointment system is indispensable to avoid overcrowding at any one session.

The record of the patient's history, physical examination, subsequent visits, and social history is kept as part of the routine hospital records. The nomenclature adopted by the American Association for the Study and Control of Rheumatic Diseases is followed as closely as possible for statistical purposes

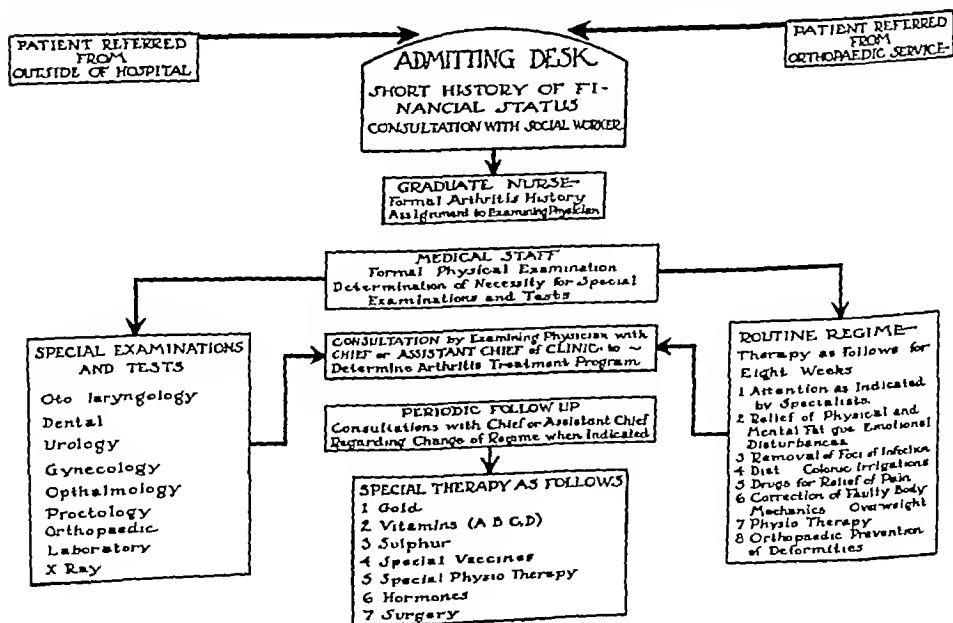
At least 80 per cent of our cases improve in a satisfactory way as ambulatory patients. This is an important consideration at the present time, because a large majority of our patients are in the low-income brackets and

## ORGANIZATION OF THE ARTHRITIS CLINIC HOSPITAL FOR THE RUPTURED AND CRIPPLED



THE ORGANIZATION OF THIS CLINIC CONFORMS IN ALL  
MAJOR RESPECTS TO THE MINIMAL STANDARD REQUIREMENTS  
FOR ARTHRITIS CLINICS ESTABLISHED BY THE ARTHRO-REHABILITATION ASSOCIATION

## A PATIENT'S COURSE THROUGH THE ARTHRITIS CLINIC ~ OF THE HOSPITAL FOR THE RUPTURED AND CRIPPLED ~



siderable expenditure of money for an efficient follow-up system, for this involves a great deal of time and detail. But we have proved beyond a doubt that it is this financial outlay that promotes the best interests of the clinic. It not only enables us to estimate accurately the results of our treatments but the financial outlay entailed in a follow-up system is many times repaid in the increased attendance of the clinic.

Our system is in charge of two special secretaries assigned to the clinic who work in conjunction with the Social Service Department.

The following method has been found to be excellent. If the patients do not return for two consecutive visits, a postal card is sent. If after ten days the patients do not return, another card is sent, ten days later, a letter is sent. If there is still no response, a social worker pays a visit to the home. In this way we are able to find out the reasons for non-attendance and, wherever possible, to remedy the cause for the absence. When the patient is discharged, his name, number, and address are placed on a card in the follow-up file. In six months a letter is sent inviting the patient to return for evaluation of results of therapy. This procedure is continued for at least five years and results in bringing to light interesting and important information. Even this is not complete enough, because patients move and it is difficult to trace them in a large city. We are trying to get the patients to cooperate in notifying us of changes in address.

We wish to acknowledge our indebtedness to Dr. H. A. Nissen, of Boston, for the institution and perfection of this follow-up system. On several occasions he has visited the Arthritis Clinic at the Hospital for the Ruptured and Crippled, at which time he has made valuable and helpful suggestions. Anyone interested in an ideal follow-up system should read his article, "The Continuous Follow-up Department of the Modern Hospital," in the *New England Journal of Medicine* for December 6, 1934.

## Research

Progress in arthritis therapy, like all other branches of medicine, depends on carefully controlled research. By carefully studying each patient's condition and progress and accurately recording the data, a certain amount of good clinical investigation can be conducted in the regular sessions of the arthritis clinic. Because such clinics are primarily for the care of all sufferers of arthritis, it is not easy to test accurately the efficacy

of various therapeutic agents in a regular arthritis clinic. For this reason we have found it necessary to establish a special research clinic, because much more intensive and valuable research can be done by carefully selecting desirable patients who are to go to the special research clinic for the study of some particular problem related to the treatment of arthritis. For evaluating various therapeutic measures, it is necessary to follow a carefully planned routine. Since a large majority of cases of less than one year's duration may be cured by various therapeutic measures, they may give false value to any therapeutic agent used. To eliminate this criticism, we select cases of at least two years' duration which have proved resistant to the many recognized forms of therapy. By taking accurate measurements, complete laboratory and physical examinations, motion pictures, and x-rays before, during, and after treatment, we have been able to keep an accurate and honest record of the progress of each patient. It takes a long time, as long as two years, to care properly for such patients, and, in order to keep the patient attending this research clinic regularly, we furnish free medication and laboratory and specialists examinations.

Animal experimentation and intensive chemical research require more laboratory space and equipment than is usually available in a hospital. If such work is an essential part of the clinical investigation, it can be satisfactorily done at a university by the hospital's financing the project.

Recently, a committee appointed by the American Rheumatism Association—consisting of Dr. Ralph Boots, chairman, Drs. Walter Bauer, Homer Swift, Loring Swaim, and Robert Osgood—has been working on what is considered by the committee to be the minimal requirements for an arthritis clinic. Up to date, however, these requirements have not been formally adopted, but it is probable that they will be in the near future. When they are adopted, it will be easy for the large cities to form local arthritis societies, because undoubtedly there will be several arthritis clinics in the large cities that will meet the minimal requirements. It is worthwhile to note that Philadelphia has already pioneered in this direction—the Philadelphia Rheumatism Association was established at least three years ago. It is our opinion that all arthritis clinics should be graded much the same way as cancer and general hospitals are graded. These arthritis clinics should then be recog-

cannot afford to be hospitalized where there are no free beds

In our opinion an ideal arrangement is to have a number of free beds available in the hospital with which the clinic is connected. This facilitates the detailed study of certain cases by the staff of the arthritis clinic.

In our hospital the following facilities are at the disposal of the Arthritis Clinic for consultation, diagnosis, or treatment: (1) laboratory service—(a) biochemical, (b) serologic, (c) bacteriologic, (d) pathologic, (2) roentgenologic facilities, (3) physical therapy department, (4) special consultants—genito-urinary, otolaryngologic, gynecologic, dental, etc., (5) photographs, including moving pictures of each new patient—50 to 100 feet in all positions and walking, and (6) occupational therapy.

**Nursing Service**—The nursing service of the hospital is responsible for carrying out nursing procedures of the clinic.

**Social Service**—The primary duty of the social service is to supplement medical with social treatment. This aids the physician in dealing with such conditions as the patient's home situation, occupation, or mental attitude—those things that require adjustment in order to make medical aid effective. As soon as possible after patients are enrolled, they are visited by a social-service worker who completes the social record and adds it to the case history. The social-service workers in the arthritis clinic are directly responsible to the director of the social service of the hospital. They are present during the entire clinic session and are of great assistance to us in our follow-up system, as will be shown later.

While our clinic is primarily a pay clinic, we are able to take care of a limited number of free patients by special research grants. All cases referred to us from the orthopedic department of the hospital are given special consideration, and every effort is made to adjust fees to meet the financial status of the patients. No patient from this source is sent away until the chief of the clinic or his associate has reviewed his financial condition. Likewise, cases applying to us from outside sources are always given a sympathetic hearing and aid, if possible.

It saves the physicians' time to have a specially trained nurse to take histories and to obtain complete data for future statistical records. The examining physician takes her record but asks his own questions in order to bring out pertinent facts.

Following the completion of the physical

examination, the patient is referred routinely to the laboratory for complete blood chemistry studies, Wassermann, sedimentation rate, complete blood count, and urinalysis. It is essential that the laboratory work be as complete as the physical examination. If the need arises, other blood chemistries are done: cholesterol, phosphorus, phosphatase, and other diagnostic procedures as basal metabolic rate, x-rays, electrocardiograms, etc.

When the reports of the various specialists are completed, the positive facts having a bearing on the diagnosis of the case are listed as the positive objective findings.

We have found that at first it is wise to follow, as a routine, those forms of treatment which in our experience are of proved value. If after three months the patient shows no improvement, we then place him on various forms of special treatment. Sometimes these are referred to as treatments of unproved value. In difficult or refractory cases these special treatments often bring about successful results where the more conservative forms have failed. While these special treatments are often more spectacular in the therapeutic results obtained, it is also true that they are often more dangerous. For this reason it is advisable to have one physician in the clinic assigned to carry out each of these treatments because the experience he acquires enables him to administer the treatment with the least possible danger and the greatest possible efficiency. For example, one internist is assigned to treat all the patients under gold, another, high potency vitamin D, another, vaccine therapy, etc. The physician sees his patients at weekly intervals and changes the therapeutic regimen as the need arises after consulting with the chief or associate chief of the clinic.

### Follow-Up System

One of the most important aspects of an arthritis clinic is the follow-up system. Instituting this service has proved to be an excellent thing for the hospital and invaluable for several reasons. The patients are impressed with the interest shown, it serves as a reminder of appointments, and it stimulates, in the patients, a more cooperative spirit. This cooperation is absolutely essential to the physician in evaluating any type of therapy and compiling statistical data, and, of course, faithful attendance is highly necessary if the physician is to accomplish desired results.

Ordinarily, it is very difficult for hospital executives to realize that it requires a con-

# ROENTGEN-RAY THERAPY OF PLANTAR WARTS

ANDREW H. MONTGOMERY, M D , and ROYAL M. MONTGOMERY, M D , New York City

AS EVIDENCE of the growing importance of these painful, disabling, common lesions there have been several reports of their treatment by roentgen rays in American and foreign literature in the last ten years. Notable among these are articles by Osborne and Putnam,<sup>1</sup> Leddy and Johnson,<sup>2</sup> Standish,<sup>3</sup> Klapproth,<sup>4</sup> Marques,<sup>5</sup> Popp and Olds,<sup>5</sup> and Belot.<sup>7</sup> But in none of these is there to be found any differentiation as to the types treated. No uniform plan is offered as to dosage. Some recommend large doses at long intervals. Others use smaller doses at shorter intervals. The majority report the use of unfiltered rays, with occasional references to filtration.

We believe that the following report is justified by the fact that in a large series of private patients, 583, a very large percentage of cures was obtained by roentgen-ray therapy alone without the slightest disability having been caused. No person was laid up a single day on account of the treatment. There were no regrettable sequelae. There were no recurrences.

Unfiltered rays were used throughout this series, the horny tissue absorbing to a great extent the soft and medium rays. An unfiltered skin unit, according to the calibration of our machines, equals 340 r. Radiation is generated at 87 kilovolts 3 milliamperes with a skin-target distance of 8 inches, kenotron rectification.

With one or two exceptions larger doses were used than have been reported previously. The interval between irradiations was less than in any other series, but, because of the technic developed (that of very close and increasingly contracted shielding), not a single case of radiodermatitis has ensued.

Moreover, our series is unique in that we were confronted in the majority of cases with lesions that had resisted therapy by more or less skilled operators using caustics, local and intramuscular injections, electrocoagulation, surgical diathermy, etc. Many were recurrences after surgical excisions. Their stubborn nature is shown by the fact that the average duration of our warts before roentgen therapy was over eleven months.

We have excluded from our list some 140

cases of mosaic warts (Figs 1 and 2), insensitive patchy types with ill-defined borders, described by us three years ago<sup>6</sup> as decidedly radioresistant. As proof of their resistance to radium, roentgen rays, and other common modalities, many patients have come with areas of radiodermatitis, irradiation ulcers, and permanent damage to the plantar fat pad (Fig 3). These unfortunate avoidable results were an added incentive to the writing of this paper.

There seems to be much inexcusable error in the diagnosis of plantar warts. Those under pressure points are usually surrounded by, or imbedded in, callus. A roughened central mass in an encircling smoother callus should call for investigation. Deviation from the normal arrangement of papillary lines should make one suspect the presence of a wart. In callus the normal ridge and furrow system is maintained. Upon superficial paring of a wart, one finds an oval, rounded or multilobular mass, varying in color from the normal skin and sharply limited from it by a light, often transparent horny membrane. In this central mass are visible, minute, dark points—coagulated blood in the tips of enlarged papillae (Fig 4). Further paring opens these tips causing capillary hemorrhage.

This vascular condition is entirely absent in a corn or in callus, but occasionally it may be simulated in those intensively painful lesions, popularly called neurovascular corns, located beneath prominent metatarsal heads usually in hyperthyroid individuals. In these growths hypertrophied blood vessels may be seen through the transparent horny layer lying parallel with the surface. Close examination may reveal minute superficial fissures. We have many photographs of ulcers caused by persistent irradiation of these lesions.

Our list includes some cases of the infective or epidemic type of plantar warts—multiple lesions, usually bilateral, found most commonly in young people. They may be inflamed and painful and are often accompanied by hand warts. These are curable by any destructive method. A roentgen dose of 1 skin unit usually is adequate. This form of wart responds to various kinds of injection therapy. In children from 8 to 18 years of age it is this type, and this type only, which

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 7, 1940.

nized, not only by the American Rheumatism Association, but also by the American Medical Association, the American Orthopedic Association, and the American College of Physicians

Finally, great credit should be given first to the American Committee for the Study and Control of Rheumatism and second to the American Rheumatism Association for the progress that has been made in the last ten years in organizing and promoting better and more efficient arthritis clinics. At the same time they have done much toward increasing public interest in the study of arthritis.

It would be desirable to have at least one or two hospitals in the United States devoted entirely to the study and treatment of arthritis—hospitals modeled after the Memorial Hospital in New York City, which is devoted to the study and treatment of cancer. As arthritis is twice as common as tuberculosis and ten times as common as cancer, it would not seem that this is too much to ask. However, despite the need for such an institution, two objections are often raised by various members of the medical profession. The first is the fact that, although the personnel of the staff would be enthusiastic at the start of the establishment of a separately maintained hospital, there is always the possibility of a lapse of enthusiasm as time goes on. The second objection is the matter of finances and the maintenance of special laboratory, x-ray, and research facilities.

It is our opinion, in answer to the first objection, that enthusiasm would not lapse because of the great need for work of this kind. The amount of enthusiasm displayed by the staff of any hospital depends upon the organizing ability, the vision, and the enthusiasm of the chief of staff. Second, in regard to finances and the maintenance of laboratory and x-ray facilities, it is obvious that at the present time any class A hospital must have up-to-date, well-equipped x-ray and laboratory departments. If research is necessary, it can be done, as has been mentioned before, at university hospitals where equipment for research is provided.

At the present time it is difficult for the arthritis patient to know where to go to ob-

tain the highest type of treatment. No arthritis clinic, regardless of its efficiency, can be brought to the attention of the public as well as a hospital devoted exclusively to the treatment of arthritis.

In the future we will probably have to have three types of arthritis clinics. One type, called Research Clinics, would be limited to university hospitals, because they can not only furnish very exact clinical statistics but they can also have these investigations correlated with reliable and detailed bacteriologic, chemical, and animal experiments.

The second group of clinics could be organized for clinical research work in arthritis, their scientific reports should be strictly limited to clinical investigation as to the value of new forms of therapy in arthritis.

A third type of clinic could be developed in any well-equipped general hospital regardless of size, locality, or equipment if at least one member of the staff is assigned to take care of the arthritis problem in the hospital and if an attempt is made to build around him a modest arthritis service. These clinics should be headed preferably by an internist. He could easily keep well informed regarding changes in the trend of thought and therapy pertaining to the arthritis problem by carefully reading the "Rheumatism Review" published annually in the *Annals of Internal Medicine* and by an occasional visit to one of the larger and more ideally equipped clinics.

The problem of the proper care of arthritic patients should, to a large extent, be cared for by the general practitioners, as 60 per cent of all arthritis cases are fairly easily cured. The necessity for establishing more special arthritis clinics can easily be seen from a careful study of the following statements. Of the seventy-seven medical schools in the United States which are recognized as Class A medical schools, only a minimum number of these have any special course in arthritis or any clinics devoted exclusively to the treatment of arthritis. To the best of our knowledge only two postgraduate schools in this country give instruction in arthritis, and throughout the United States there are no hospitals devoted exclusively to the treatment of arthritis.

#### SOMETHING TO REMEMBER

The doctor who appears on the witness stand not only speaks for himself but represents the entire practice of medicine. His manner, the opinions which he voices, the scientific knowl-

edge, and the interest in the case as a whole stands out conspicuously to the honor or to the discredit of all medicine.—*Cleveland Academy of Medicine Bulletin*

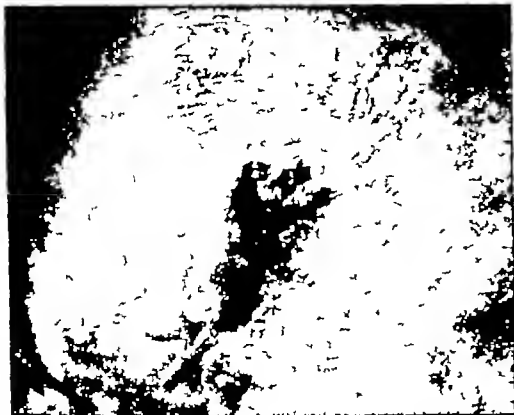


FIG 3

FIG 3 Radiation ulcer due to repeated treatments in two hospitals in an attempt to remove a mosaic wart

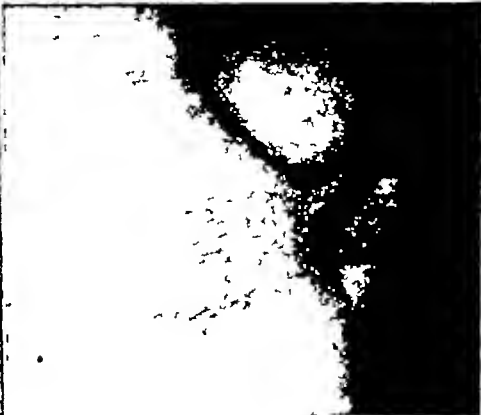


FIG 4

FIG 4 Verruca plantaris under pressure point showing sharp limitation and capillary tips

the neighborhood of the fourteenth day, that 87½ per cent of the dose is lost in ten and one-half days, and that the destructive effect is relatively brief, becoming at first simply inhibitive and, finally, with loss of ray effect, passing to a phase of stimulation wherein the influence is directly opposed to the effect desired. Recent careful experiments, however, "have never detected any actual stimulating effects, for any dose whatever."<sup>16</sup>

Ten days after the initial dose, approximately 85 per cent or four-fifths of it is necessary to bring the effect to the saturation point. At this interval there is no danger of any accumulation effect, and the maximum action is more continuously maintained.

One other important factor obtains in our technic. Undoubtedly the safety attending the use of frequent large doses depends upon our habit of very close shielding. In contrast with the custom of wide shielding in raying cutaneous malignancies, we shave plantar warts until the exact outline of the lesion can be marked in ink. A hole in lead sheeting is cut just the precise size and shape of the inner part of the ink-line. This shield, about 2½ inches square, is fastened in position with strips of adhesive plaster. Large lead sheets of 12/1,000-inch thickness with larger holes over the shield-hole are so placed as to protect the foot and limb. A lead-rubber mat covers the other limb. An initial dose, its size depending upon factors to be mentioned, is then given.

Ten days after this first dose when there is usually found, on paring, desiccation of superficial capillaries, distinct contraction of the

size of the wart, and relief of pain, a smaller shield-hole is cut to fit exactly just inside the contracted border. A dose four-fifths that of the first one is then given. This process may have to be repeated several times, using the same four-fifths dosage through gradually contracted holes, the purpose being to focus on and to destroy the central afferent blood vessels and nerve filaments and to avoid raying normal tissue about the rounded base of the wart. Through a hole less than 1/8 inch in diameter the rays are dissipated and have little effect.

Because of the use of gradually contracted shielding, there does not occur any inflammatory reaction, pain, or subwart puffiness. This is in contrast to some, even recent, reports of postradiation pain and tenderness. We agree with Leddy and Johnson<sup>2</sup> of the Mayo Clinic that such reactions are probably due to careless shielding, with inclusion of some normal skin.

With the stubborn, previously treated warts we have encountered, usually three and sometimes four such intensive and four-fifths doses are required. Gradually it is noticed that the papillary lines, which in the untreated wart are widely swung around or end abruptly at its margin, assume their normal arrangement. In the end they cover the site. At the same time the surrounding callus becomes thinner, and, finally, it assumes the thickness of the other parts of the tread. There have never followed any indications of atrophy or of radiodermatitis. We have examined feet so treated many years after



Fig 1

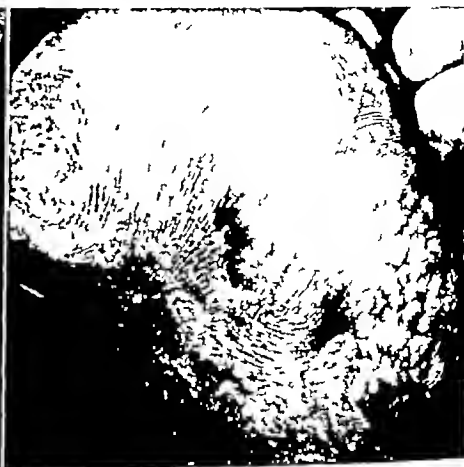


Fig 2

Fig 1 Mosaic type of Verruca plantaris showing aggregate warty cores in patches which are impossible to shield closely These are radioresistant

Fig 2 Mosaic wart shaved down to show individual cores

we have found to be amenable to suggestion therapy in its varied forms and subterfuges (Fig 5)

In the so-called "mother-daughter" type, which may involve any part of the sole, there is a central larger lesion with outlying satellites, some of which may be so minute and transparent as to resemble vesicles These, with the multiple epidemic type, are probably of filtrable virus origin They stand distinct as to curability from the single pressure-point, painful variety in which the factor of traumatism probably enters It is mainly with this last type that our report deals

As indicated above we have used roentgen rays in the treatment of plantar warts among our private patients almost exclusively, modifying the technic of others with, we think, better results Exception is made invariably in the case of compound lesions of mosaic pattern which are often associated with lesions of verruca plana juvenilis elsewhere In general, for this type we have found, as have others, roentgen-ray therapy (with or without filters) to be futile

Years ago when we were using roentgen doses of 1 to  $1\frac{1}{2}$  skin units at monthly intervals, as recommended conservatively by MacKee,<sup>9</sup> we were disappointed so often at finding no evidence of desiccation or contraction of a wart that after two or three such exposures we changed to some other form of therapy

In the meantime better results were reported by Michael,<sup>10</sup> Hazen,<sup>11</sup> and Taussig

and Muller,<sup>12</sup> using two or three erythema doses

Then we began increasing the size of the initial dosage, having in mind also Ewing's<sup>13</sup> statement that "increased resistance to radiation is acquired by a tumor after successive treatments with inadequate dosage," until 4 or more skin units (1,360 r plus) were given This had the effect of increasing the percentage of cures But still patients returned at the end of a month with the same active capillaries on paring and with the same pain Usually they told of relief for a week or so, after which tenderness returned and gradually increased That the recurring pain was not due to a subwart reaction from the previous raying was proved by the fact that it ceased after the second dose and was not followed by painful puffiness

Still believing our technic to be faulty we began giving somewhat reduced large doses at intervals of three and of two weeks Obtaining better results we lowered the interval to ten days This ten-day period between rayings has been maintained with few exceptions throughout the series

The inference to be drawn from the experiments of Kingery,<sup>14</sup> modified somewhat by other more recent measurement methods mentioned by MacKee,<sup>9</sup> seems to prove that our reasoning was not faulty Kingery deduced that the maintenance of the optimum tissue effect of roentgen rays must depend upon the rate at which the rays are lost, that the residual effect has become negligible in

astringent powder under a light cocoon dressing. And for protection from pressure a half-moon-shaped, felt pad is applied.

Comparative percentage tabulations of the results of therapy are apt to be futile unless the types treated are mentioned. For example, we feel that if roentgen-ray irradiations were limited to previously untreated plantar warts one's percentage of cures would be very high. It would be still higher if only the multiple, infective, epidemic variety in children were selected. On the other hand the opposite would hold if lesions of the mosaic patch type predominated. As mentioned, the majority of plantar warts in our series were of the limited, resistant type scarred by previous attempts at removal. Most were on weight-bearing areas. Some, but not many, resisted therapy with our technic and had to be removed by other means attended by temporary disability.

In our series there were 583 cases, in which the end results are known in 487. Of these 439 were cured by roentgen therapy alone, an average of 90.35 per cent. There were 48 failures. Twenty-nine were cured in one treatment. This is low in comparison with the reports of others and probably is due to the resistant type treated in our series. The total dose varied from 1 skin unit to 20. Eleven lesions required 15 or more skin units. The average total dosage was 6.86 units. The average number of treatments was 3.28. Two hundred and fifty-five patients had single lesions, 328 had two or more. The average age of patients was 28.5 years. The ratio of women to men was  $2\frac{1}{2}$  to 1.

There were 96 cases in which the final result is unknown. We feel confident that some of these should be placed in the class of cures by one treatment. Others undoubtedly received so much relief from the first or second raying that they thought further treatment was unnecessary.

### Summary

The treatment of plantar warts exclusively by roentgen rays in a series of 583 private patients in the past eleven years is reported. Of the 487 cases in which the end results are known, 439 or 90.35 per cent were cured.

Mosaic warts with ill-defined edges, which we have found to be radioresistant or unsuitable for adequate close shielding, were not included. Otherwise all the cases in the series were unselected.

Most of the lesions had resisted treatment by others using other methods or were recurrences. Many were fibrosed. Their average duration was eleven months.

A radical modification of the usual technic of roentgen therapy has been developed. Briefly, it comprises the use of a large predetermined initial dosage, its size depending upon several factors, followed at ten-day intervals by one, two, or three saturation doses, four-fifths that of the initial dose, through precisely fitting shield-holes in lead sheeting. These holes are reduced in size as the lesion shrinks.

There has been an entire absence of sub-wart reaction or of any unfortunate sequelae.

This technic is recommended as a standard for roentgen-ray therapy of plantar warts. It is highly effective, safe, painless, comparatively rapid, and entails no disability or loss of time.

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### IN CALIFORNIA, THERE THEY COME

The California Physicians Service has grown steadily in clientele by 1,000 to 1,500 members a month since its start in August, 1939, and in October, 1940, it had a membership of over 18,000, according to the J A M A. Over

5,000 California physicians have enrolled under the plan. Collections from beneficiary members up to August, 1940, totaled \$27,409. Several schools and relief authorities are negotiating with the service for medical care.



FIG 5 Epidemic type of verruca plantaris cured by psychotherapy (by insertion of a sterile needle in the buttock)

Our patients are treated in the prone position with the sole upward and nearly horizontal. The feet rest upon a frame of light construction which we have devised. It has soft leather pads suspended on two sides. By changing its position elevations of 7 and 10 inches above the treatment table are obtained.

Patients' lead shields are preserved in their case history charts. With the holes dated they show graphically the shrinkage between treatments.

Unless two or three warts are close together, on the same plane, each wart is rayed separately. Attempts to transfer outlines of many inked-in warts by tracing paper to lead sheeting make for inexactness and the raying of some normal skin at the edges of some lesions.

In the case of the "mother-daughter" type, the older wart is given a closely shielded subintensive dose. This is followed by a dose of 1 skin unit to the whole warty area through a large common shield-hole. Usually later on the satellites are found to be darkening and desiccating, requiring no more irradiation. The large lesion is treated thereafter, if necessary, by the usual ten-day, four-fifths dosage.

Seldom have we broken our rule never to irradiate a wart previously treated by others with radium or roentgen rays. For, even if the total dosage given is known, one can never be quite sure as to the size of the aperture through which the irradiations had been given. Some patients have come to us with definite radiodermatitis about a lesion. One such patient presented a wart under a middle metatarsal head. A circle of radiodermatitis caused by raying a wart in the same location

years before involved even the tips of some toes. Recently, a woman was referred to us for further irradiation of a lesion under a pressure point. Under a moleskin disk the wart was encircled by an inked-in oval extending in one direction  $\frac{1}{4}$  inch beyond its margin.

Our initial dosages have been increased gradually until in some rare instances they approach those mentioned by Osborne and Putnam,<sup>1</sup> who give up to 8 skin units and repeat once in two months if necessary. Following their report in 1931 we tried this one-large-dose method in several cases, but there were too many failures. The fact that conservatism has governed all our exposures is proved by the absence of sequelae. We have had occasion to see many of our wart patients years afterward for other dermatologic conditions. Invariably an examination of the feet is made, and invariably it is impossible to find the site of the lesion rayed, unless there had been scarring from treatment antedating ours.

The size of the initial dose has to be determined for each wart, depending on its size, depth, vascularity, amount of keratinization, and the amount of fibrosis from previous types of treatment. The horny tissue left after paring acts as a filter. Andrews<sup>2</sup> states that it has an absorption coefficient equivalent to aluminum. In general it is safe to work on the rule that the larger the lesion the smaller the dose. Excepting mosaic patches, one seldom sees a plantar wart of over  $\frac{1}{2}$  inch in diameter. An initial dose of 3 to 4 skin units can be given it safely. To a lesion  $\frac{1}{4}$  inch in diameter a dose of 4 to 5 units is effective and safe with close shielding. A markedly keratinized lesion may require more. A vascular lesion with radiating papillae, a wart at its acme before the regressive stage when mitosis ceases, will respond to a smaller dose.

As a rule children require smaller doses. Their limited lesions are not so keratinized or so deep. It is safer also to employ reduced doses in patients with diabetes, in those with trophic disturbances (e.g., from neurosyphilis), and in those with faulty peripheral circulation. But it must be stressed that in these conditions roentgen therapy is by far the safest method to employ.

We remove all hand and other warts by electrocoagulation to prevent recurrences from potential foci.

Between our plantar wart treatments we endeavor to keep the lesion dry by use of an

is by way of the blood vessels in the marrow spaces between the outer and inner tables of the skull with ultimate necrosis of the compact bone of these tables, the formation of "Pott's puffy tumors," extradural abscess, frontal lobe abscess (which is very common and of surprisingly early formation), meningitis, and death. The upper limit of the edema is a close approximation to the progress of the bone infection, but the characteristic mottled appearance, when seen in an x-ray plate, is usually about ten days behind the extent of the infection. While in some cases the osteomyelitic process is relatively benign, tending to self-limitation and the formation of sequestrums which can easily be removed, as a rule the disease is steadily progressive, and the careful surgeon will not delay once his diagnosis is established but will with apparent ruthlessness remove all diseased bone of both tables as well as a 2-inch margin of healthy bone. This leaves an appalling defect in the protective skull—frontal, parietal, temporal, or whatever cranial bones have been involved—but, fortunately, in many instances osteogenesis takes place with the formation of a new protective cranial plate. Much can be done to help accomplish this result, but further discussion is beyond the limits assigned to this presentation.

In connection with head pain it is necessary to recall that suppurative diseases of the middle ear, due to invasion of this space by microorganisms, will produce pain centering in the ear and mastoid and which is usually very great in the acute states. Politzer classically describes it as follows: "Purulent inflammation of the middle ear begins with piercing, tearing, boring, throbbing pains in the ear, which radiate towards the vertex, occiput, teeth and shoulder." Not all cases present this description, but the proper management of an acute suppurative otitis media based upon a good history and an accurate interpretation of the otoscopic picture will prevent, in many cases, the development of deeper involvement with such serious sequelae as to lead to a fatal issue. A well-performed myringotomy at the proper time is one of the most valuable otologic procedures.

The question of unexplained fever in infants and children comes up frequently in the general practice of medicine. Often after the most painstaking study, the cause of the fever still remains unexplained. A myringotomy in these cases may cause a prompt defervescence. It is well to recall that the lymphatics of the middle ear of the infant or child are nine

times more permeable than those of the adult and, therefore, constitute a greater degree of absorption, as pointed out by W S Bryant.

Many infants have shown protracted gastrointestinal disturbances (diarrhea, dehydration, athrepsia, malnutrition), and careful studies conducted by Dean, Lyman, Jeans, Marriott, Byfield, and others pointed to a possible relationship between middle-ear infection and the intestinal symptoms. Myringotomy for the purpose of obtaining ample drainage from the middle ear and, where the symptoms persisted, an antrotomy or a formal mastoidectomy often produced favorable results.

Unexplained fever in infants and children should always direct attention to the ears and accessory sinuses, especially if the individual presents evidence of athrepsia or malnutrition that does not yield to standard pediatric measures. In such cases a frank, middle-ear suppuration or mastoiditis is rarely found, and at times the decision to operate (myringotomy or antrotomy) must rest largely on the fever, weight, and diarrhea chart.

General malaise, loss of weight, cough, and mild evening fever may be due to an almost symptomless infection of the paranasal sinuses, especially in children, and the diagnosis is made only after careful clinical and x-ray study, after suspicion has been directed to this region, or after other measures of control have failed. The usual symptoms are frequent nasal colds, more especially post-nasal discharge, often overlooked, and the appearance of chronic, inflammatory signs in the nasal mucosa and by x-ray studies. It is surprising how often an apparently intractable case of bronchitis or early bronchiectasis in children will promptly yield to conservative measures directed toward control of sinus infection.

I will not attempt to detail the symptoms and signs of a typical mastoiditis, since they are, doubtless, well known to all of you. It should be remembered, however, that a large number of cases of acute mastoid infection do not present all, or at times many, of these diagnostic signs and that even the x-ray is not infallible. For instance, we may have this pathologic condition without fever, pain, tenderness, edema, or even otoscopic evidence of middle-ear infection. A seventh nerve or facial paralysis in a case of acute middle-ear infection may be directly due to this cause without any more mastoid inflammation than is always present in acute otitis media, but it must be remembered that herpes zoster oti-

# EARLY RECOGNITION OF SERIOUS LESIONS OF NOSE, THROAT, AND EAR

GEORGE MORRISON COATES, M D , F A C S , Philadelphia

YOUR secretary, in assigning to me this title, asked that I deal with the consideration of some of the more common symptoms found in the upper respiratory tract, which, when carefully observed and studied, might disclose, in some instances, serious lesions either in neighboring or remote parts. With the view to preventing unforeseen or untoward pathologic sequelae, I shall briefly set forth a number of symptoms, with comments, which I hope will fulfill the plan of this presentation.

Headache is a symptom that every doctor is confronted with in his practice. It is fully appreciated that one or more systems, other than the upper respiratory tract, may or may not be the absolute direct cause. Nevertheless, certain principles should be borne in mind with regard to the respiratory system. Sinusitis may be present even though the patient gives no history of headache. When headache is present, inquiries relative to the character of the pain—situation, duration, frequency, exacerbations, and remissions—are of the utmost importance, because, together with the examination and other diagnostic aids, they may throw light upon what sinuses or group of sinuses may be involved. All of us recognize, I am sure, the protective function of the nose. When this important function becomes impaired, the accessory sinuses, the ears, eyes, larynx, tracheobronchial tree and lungs, the bones of the skull, the brain and its coverings, important blood vessels in the interior of the skull—any of these vital structures—may become seriously involved with possible fatal consequences. Thus, a sphenothmoid or frontal sinus infection can easily lead to an osteomyelitis if the microorganisms are virulent and the bone is in a poor nutritive state. Depending upon the virulence of any of the bacteria, the resistance of the host, and the physical and other constitutional assets of the patient, if the sinuses are not dealt with adequately to allow them to recover their normal function, they may act as a focus of infection for the intracranial structures as they unfortunately often do. An ap-

preciation of the anatomy and physiology of these structures, with a good history and careful examination followed by proper therapy, conservative or operative as the situation demands, will obviate serious secondary lesions elsewhere.

Excessive nasal and postnasal discharge, as well as frequent "head colds," calls for a thorough review of the sinuses, irrigation of such sinuses as may be readily irrigated so that the washings may be evaluated, and x-ray studies, first using the flat plate and then, if necessary, radiopaque oil for the purpose of delineating thickened mucous membrane, polypi, etc. By such methods the source of pus will be found, after which such therapy as indicated can be instituted.

Where intracranial complications arise during the course of a sinusitis (or otitis media) and where meningeal symptoms, external orbital swelling, blindness, retinitis, choked disk, iridocyclitis, exophthalmos, fistulas, and the usual neurologic manifestations are present, a quick survey of the sinuses (or ear) should be made and the focal point or points of infection found and thoroughly eradicated or drained. All other measures along approved surgical lines should be carried out.

Acute infection of the nasal sinuses, especially when it is secondary to swimming and when it involves the anterior ethmoid and frontal cells, frequently causes edema of the eyelids, sometimes massive, headache, pain, fever, and nasal discharge. Such a picture is always alarming, since necrosis of the bony walls of the involved sinus may easily take place unless drainage is quickly established and complications may rapidly develop. Among such complications are orbital cellulitis and cavernous sinus thrombosis, which it closely simulates, meningitis and frontal lobe abscess, and the much dreaded osteomyelitis of the frontal bone. The latter complication sometimes follows operations on the nose, especially the frontal sinus, and, as a rule, develops slowly, sometimes even after the acute sinus symptoms have subsided. When such is the case, it is characterized by low fever and edema slowly spreading upward from the upper eyelid and eyebrow to cover, in some instances, the entire calvarium. Osteomyelitis is an infection of diploic bone, and its spread

Read by invitation at the Annual Meeting of the Medical Society of the State of New York, May 9 1940

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some form of "unlocking the petrous pyramid," as originally advocated by Eagleton, is essential if life is to be saved

Epistaxis is a frequent symptom of varied conditions. It may occur during the exanthems, in some of the anemias, during the passive congestion states of cardiovascular-renal disease, in hypertension, tuberculosis, and possibly some of the metabolic disturbances. Local conditions, such as ulceration of variable etiology, trauma, and foreign bodies, also may cause nasal bleeding. (It is especially important to remember that unilateral nasal bleeding may be an expression of nasal diphtheria, and the physician should always bear in mind the possibility of benign and malignant tumors.) If a mass is noted in one naris with a history of epistaxis and if probe palpation of that mass reveals it to be friable and bleeding very easily, suspicion of a malignant growth is in order. No hesitation should then be made in obtaining a biopsy to see the histopathologic picture. Early diagnosis of intranasal malignancy and thorough surgical and radiologic treatment will often save life.

Bleeding from the throat means that a thorough check-up of the blood should be made and that there should be a careful inspection of the nose, nasopharynx, oropharynx, and laryngopharynx to rule out ulcerations, fibromas, or malignancies. Heart disease and hypertension should not be overlooked, nor should hemophilia and purpura hemorrhagica.

Unilateral bleeding from the nose is most frequently from Little's area on the cartilaginous septum nasi and is caused by small ulcerations that are the result of dried secretions from the anterior sinuses, traumatism, typhoid and other fevers, hemangiomas, and other so-called benign tumors such as fibromas.

Symptoms referable to the throat may suggest a simple pharyngitis or something more serious. A blood count taken routinely in a large number of patients seeking medical advice about their sore throats is apt to reveal interesting data. Thus, agranulocytosis, leukemia, or some other blood dyscrasia may be diagnosed. Occasionally, recurrent sore throats, excluding tonsillitis and ethmoiditis, may reveal by means of appropriate blood studies either a diabetes or a nephritis.

Hoarseness indicates that there is some impairment of the larynx. The true vocal cords must approximate, vibrate, and tense properly, and any condition interfering with these

functions produces hoarseness. The causes may exist within the larynx or may be due to some cause outside of the larynx. Chevalier Jackson lists fifty conditions concerned in hoarseness and adds that this list is *nearly* complete. In the general practice of medicine it is important to examine the larynx carefully in every case of hoarseness to rule out the possibility of tuberculosis, syphilis, and carcinoma or other neoplasm. It must be remembered that two or even three of these conditions may co-exist in the same patient. Appropriate blood studies, x-ray, sputum, biopsy, bronchoscopy, and re-examinations will give an accurate diagnosis. When the latter is obtained, therapy along rational lines will give the best effects. Antisyphilitic therapy, appropriate methods used in tuberculosis, and the measures used in dealing with malignancies by cooperation of the laryngologist or bronchologist and radiologist will be a great help provided the diagnosis is made early and the treatment is carried out thoroughly.

Hoarseness in the acute stage is usually due to an acute infection of the upper part of the respiratory tract, by improper use of the voice—singing during an acute "cold," shouting at a baseball game, or the inhalation of irritating gasses. When it lasts for any considerable length of time, a careful laryngeal as well as general physical examination is imperative. Besides carcinoma, syphilis, and tuberculosis, chronic hoarseness is caused by overuse of tobacco and alcohol, improper use of the voice, chronic infection of the upper part of the respiratory tract, and hypertrophy of the pharyngeal lymphoid tissue, especially at the base of the tongue—the lingual tonsil, which is the base of the Waldeyer's ring of the older anatomists.

Laryngeal conditions usually arise secondary to some lesion elsewhere. Laryngeal tuberculosis is rarely primary, almost always secondary to lung tuberculosis. The infiltrations in laryngeal tuberculosis are found mostly in the posterior portions (posterior commissure), especially the arytenoid cartilages and the interarytenoid space. Syphilis is the dry lesion and may involve one or both cords, often a punched-out ulceration. Carcinoma may manifest itself in several varieties and in various situations, but it is most frequently seen in its early and, therefore, most curable stage in the anterior half of a vocal cord, from whence, however, it may spread in any direction. A malignant mass situated only on the vocal cord is termed intrinsic cancer, and by

cus, an intracranial neoplasm, trauma or so-called idiopathic Bell's palsy may cause this symptom. Edema over the mastoid is often caused by an otitis externa (furuncle) or infection of the scalp, pain and tenderness are also caused by these, and fever may come from any one of many sources, which must be diligently sought for in other parts of the body.

Of the complications of acute mastoiditis, meningitis, and lateral or sigmoid sinus thrombophlebitis are the most common. The neurologic signs of the former are well known, and the confirmation is by spinal canal drainage with a finding of increased pressure of the fluid and a chemical, cytologic, and bacterial study. Early diagnosis is of the utmost importance, as early surgery on the mastoid, free exposure of the dura, and appropriate chemotherapy (sulfanilamide, sulfapyridine, or sulfathiazole) is now producing many cures, whereas formerly the mortality was nearly 100 per cent. Even if the spinal fluid is aseptic, prompt surgical treatment in the presence of increased spinal fluid pressure and cell count is imperative in order to forestall a diffuse, suppurative, leptomeningitis. Infection of the lateral sinus may be symptomless and, therefore, undiagnosable, but this condition is usually recognized by an increase of fever over that probably caused by the mastoid infection to which this pathology is secondary, by the septic character of this fever, by the accompanying rigors, which mark the peak of temperature, by the presence of metastatic abscesses, usually late in the disease, by the onset of meningeal symptoms, and by a positive blood culture. The presence of some or all of these symptoms during the course of an acute otitis media or mastoiditis, either before or after operation, should lead to exposure and exploration of the lateral sinus, via the mastoid, with appropriate surgical drainage and, in many instances, ligation of the internal jugular vein in an effort to prevent the further spread of the infection in the general circulation where the lodging of an infected embolus in a vital organ may cause death.

A chronic running ear, particularly with a thick, foul-smelling discharge, is always a potential source of danger and deserves careful watching. If the discharge is mucoid and comes through a perforation in the anterior portion of the drum head, less attention need be paid to it since its origin is usually in the eustachian tube. If in the case of the ear with a foul-smelling discharge (and sometimes even when the ear is dry for long periods) a facial paralysis develops or there is vertigo, either

mild or severe, or if pain, headache, fever, or meningeal symptoms appear, it is reasonable to assume that necrosis or absorption of bone by a cholesteatoma has approached or invaded the labyrinth, the lateral sinus, or the middle or posterior cranial fossae. A rapid diagnostic study and appropriate surgery are indicated. The radical mastoid operation is the basic surgical procedure in such a case, but it should often be resorted to as a prophylactic measure, before complications become imminent or established, where conservative treatment has failed to produce a dry ear.

One of the complications of the acute middle-ear suppuration which has come into prominence in recent years is infection of the petrous portion of the temporal bone. If the extension of infection from the middle ear or mastoid involves the labyrinth, or internal ear, as a diffuse labyrinthitis (either serous or suppurative), the symptoms, which usually appear suddenly, are chiefly intense vertigo, nystagmus, which can easily be seen, nausea and vomiting, and sudden, profound, unilateral deafness. If the infection has proceeded from the middle ear or mastoid either by pneumatic spaces or diploic bone, depending on the anatomic structure, around the labyrinth into the apex of the petrous pyramid, other symptoms are in evidence, of which the Gradenigo triad is the best known and most striking group. Paralysis of the sixth or abducens nerve prevents the outward rotation of the eyeball on that side. Pain in the ophthalmic division of the fifth nerve comes from pressure on the gasserian ganglion and may radiate over the entire side of the head and to the teeth but is especially noted in and behind the eye. There is usually a low fever and considerable malaise. When and if perforation of the cortex takes place, the pain ceases for the time being, but soon symptoms of meningitis supervene. If the perforation occurs on the lower surface of the pyramid, the suppuration may make its appearance as a retropharyngeal abscess. Not every case presenting the symptoms mentioned above needs the extensive operative procedures designed for the relief of this condition—petrositis or apicitis, often a simple mastoidectomy, very completely done, or a revision of the mastoid wound will provide sufficient drainage to ensure recovery. In other instances a radical mastoid operation is necessary, but, if signs of meningeal invasion begin to appear or if the case does not show evidence of recovery after appropriate mastoid surgery,

isolated Many of the streptococci are found in the secretions The endoscopic picture in some cases shows a dry, velvety mucosa, mottled by erosions, with crusts obstructing the bronchial orifices, other cases show varying swellings with gummy pus, red, inflammatory mucosa, and no air bubbling past These cases are profoundly toxic Culture will differentiate them from diphtheria Complications are the rule—blood-stream infection, endocarditis, pericarditis, and myocarditis Often the toxemia damages the cardiac muscles to such an extent as to render them incapable of functioning and also causes an associated pulmonary condition, for these cases have elements of bronchitis and bronchopneumonia with atelectatic areas

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Edema of the larynx, though not so common as other forms of laryngitis, is not a rare disease It is sometimes secondary to Ludwig's angina, peritonsillar and retropharyngeal abscess, allergic states, etc, and extension by continuity of tissue is the rule Many of the commoner pyogenic cocci have been demonstrated bacteriologically Occasionally it may occur primarily The larynx appears as two large, round, red eminences, the mound extending all the way to the epiglottis on each side The latter may or may not be involved but it is very red The patient is hoarse, and the general symptom is one of an acute septic inflammation Many complications can arise, septicemia, cardiac failure, and asphyxia being the more common ones The disease calls for systemic treatment, adequate elimination by skin, kidney, and bowel, abundance of fruit juices and vegetables, and tracheotomy when dyspnea supervenes

Asphyxia is defined by Chevalier Jackson as "Death for want of oxygen and carbon dioxide in the tissues" It is stated that 98 per cent of all deaths with the patient on his back, as he usually is, are by asphyxia in the terminal stage because of the check-valve action of the tongue The "lingual check valve"<sup>1</sup> is often the direct cause of death

The tongue becomes obstructive, and in a dorsally recumbent person it becomes a check valve permitting egress from, but not ingress of, air into the lungs Such cases must be properly handled and tanks of oxygen (plus 5 per cent carbon dioxide) should be kept at all first-aid stations When artificial respiration is given, the tongue should be pulled forward to allow free ingress of air The pulling forward of the tongue and turning the patient on his face eliminates the lingual check valve

Another cause of alarming dyspnea is bilateral abductor paralysis which may so interfere with respiration that a tracheotomy becomes necessary to save life This sometimes follows thyroidectomy, either from traumatism to the recurrent laryngeal nerves during the operation or their later involvement in the resulting scar tissue, or it may be central in origin

Tinnitus aurium is a distressing symptom often encountered in general practice In the absence of any local ear disease, some constitutional factor is usually the cause vascular lesions, hypertension, excessive use of coffee, tobacco, alcohol, certain drugs as quinine and salicylates, climatic and atmospheric conditions, pregnancy, gastrointestinal disturbances, and varying foci of infection This symptom requires an investigation of the physical condition of the patient, with a check-up of the acoustic and non-acoustic labyrinth as well as foci of infection in the head and elsewhere Elimination of such infected foci as devitalized teeth, infected tonsils, correction of nasal faults, and sinus suppuration as well as the elimination of distant foci will greatly aid many cases If, however, the tinnitus aurium is due to some intracranial condition, no favorable results will be obtained by any measures outlined above Often tinnitus is due to pathologic processes in the eustachian tube, middle ear, and inner ear, of which the last named is the most common cause if any ear disease at all is present Otosclerosis comes under this heading Many newer plans of therapy have been adopted for the treatment of this disturbing symptom All cases of tinnitus aurium call for a complete overhauling of the economy

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means of surgery and radiation favorable results have been reported by bronchologists. Where the mass has extended to the structures outside the true vocal cords, it is termed extrinsic cancer. The latter condition is only operable by laryngectomy because the infiltration is widespread. It is clear, therefore, that the early diagnosis and proper management of intrinsic laryngeal cancer may save life. The laryngeal surgeons have now accumulated sufficient data and statistics to prove their results even in many cases of several years standing.

Many primary blood dyscrasias produce lesions in the nose and throat which may lead to early recognition of a serious general condition that otherwise might escape notice. A sore tongue or glossitis is common in a large percentage of cases suffering with pernicious anemia. Red patches on the dorsum, small blister-like elevations on the sides, and eventually shallow, painful ulcers of short duration but showing recurrence are characteristic enough to call for an immediate blood study, as does the smooth, glazed tongue of the later stages (W E Grove). Large blister-like lesions anywhere on the mucosa of the pharynx and fauces suggest early pemphigus which is confirmed by finding similar lesions on the skin in various parts of the body. Fortunately this is a rare disease.

The appearance of necrotic and gangrenous processes in the throat and mouth, especially if accompanied by fever and prostration, suggests an acute leukemia (lymphatic, myelogenous, or monocytic) and is often accompanied by serious hemorrhages, cough, dyspnea, and adenopathies.

These lesions also occur in the chronic leukemias and are accompanied by glandular hypertrophies, especially of the tonsils, in which case disastrous results may be encountered if removal is practiced under a mistaken diagnosis. Hemorrhage into the inner and middle ear often occurs in these dyscrasias, and, even if the general disease is brought under a measure of control, irreparable damage is done to the hearing or vestibular functions. In the latter case we have the typical Ménière's syndrome. Therefore, if, in an otherwise healthy subject, sudden deafness, tinnitus aurium, and vertigo appear, a hemogram is indicated at once.

Generalized cervical adenopathy (particularly of the posterior cervical chain), small ulcerations on the pharyngeal mucosa, swelling of all lymphoid structures even suggesting peritonsillitis, malaise, fever, and headache

are the frequent or usual accompaniments of infectious mononucleosis. The appearance of the throat may be wrongfully diagnosed as due to influenza, grippe, typhoid fever, German measles, simple pharyngitis, tonsillitis, quinsy, scarlet fever, diphtheria, Vincent's angina, agranulocytosis, or many other general or local infections, and only a careful blood study can clarify the situation (Grove). So also a careful blood study is the only sure means of diagnosing granulocytopenia, when necrotic, spreading, ulcerations are encountered in the buccopharyngeal mucous membrane.

Cases of peritonsillar abscess and retropharyngeal abscess require adequate drainage at the proper time. Peritonsillar abscess, or quinsy, is caused by infected tonsils. If the collection of pus around the tonsil is not freely drained, one of several dangerous sequelae may arise. The pent-up pus may erode into one of the great vessels and cause septicemia or a violent hemorrhage. On the other hand, the resulting inflammation may extend downward and produce edema of the larynx—always a very dangerous condition. Retropharyngeal abscess is more serious than quinsy and calls for skillful incision, with mouth gag in position and without the use of any anesthetic. Use of a bistoury, properly taped, and prompt turning of the head downward immediately after incision to evacuate the septic contents are important points in the technic. The acute retropharyngeal cases must not be confused with the chronic forms that are due to caries of the cervical vertebrae and belong in the domain of the orthopedist. Patients with abscess either in the retropharynx or in the peritonsillar tissues suffer great pain and are unable to open their mouths because of the inflammation. They are virtually starving, and it is remarkable how quickly they become dehydrated and lose weight.

Acute infective laryngotracheobronchitis in children is not a very common condition but a number of cases are seen every winter in the bronchologic clinics. This condition is an acute septic inflammation of the mucosa of the larynx, trachea, and bronchi, characterized in typical cases by toxemia, edema of the larynx, and thick, viscid, obstructive, often crusting, nonmembranous exudate in the tracheobronchial tree. This disease occurs epidemically, endemically, and sporadically. It is often overlooked as a "cold." The etiology is an infection, and the disease is contagious. No specific microorganism has been

isolated. Many of the streptococci are found in the secretions. The endoscopic picture in some cases shows a dry, velvety mucosa, mottled by erosions, with crusts obstructing the bronchial orifices, other cases show varying swellings with gummy pus, red, inflammatory mucosa, and no air bubbling past. These cases are profoundly toxic. Culture will differentiate them from diphtheria. Complications are the rule—blood-stream infection, endocarditis, pericarditis, and myocarditis. Often the toxemia damages the cardiac muscles to such an extent as to render them incapable of functioning and also causes an associated pulmonary condition, for these cases have elements of bronchitis and bronchopneumonia with atelectatic areas.

The treatment of this disease resolves itself into general and local measures. The pediatrician must be on the lookout for visceral complications and combat them to the uttermost. The duty of assuring an adequate airway falls to the laryngologist, and the most certain manner of accomplishing this is to have the child properly hospitalized where tracheotomy and all the necessary bronchologic procedures and technique can be carried out *in extenso*.

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more resistant to irritating influences than the latter. Nevertheless, many toxic conditions may exist in the body which could conceivably irritate this structure. Any space-taking lesion in the brain may, by pressure, interfere with the normal function of this finely balanced mechanism whose function is motion sensing and equilibrium.

When confronted with a case of vertigo, it is important to check the ear by appropriate tests, such as voice, whisper, tuning forks, and audiometer, in order to analyze the acoustic efficiency and then to conduct vestibular tests, both by the turning chair and douching the ear with cold water at 68 F. The purpose of these vestibular tests, often referred to as the Bárány tests, is to elicit certain normal or abnormal reactions by stimulating the semicircular canals of the internal ear.

The vestibular (Bárány) tests are valuable in the diagnosis and localization of lesions of the inner ear and in many instances have been a tremendous aid in localizing intracranial lesions where other methods were without success. Differential lesions of the intracranial structures can often be brought to light by this means, as has been shown by Jones, Shuster, and many others who have also stressed the fact that these tests must be considered as only one link in the diagnostic chain of studies. Functional impairment of the ear may be an expression of a space-taking lesion in the brain or of toxic, metabolic fault, all of which should be thoroughly investigated.

Unilateral deafness not due to traumatism, leukemia, or middle-ear infection is most frequently due to (1) otosclerosis, a constitutional condition of unknown etiology, accompanied by tinnitus aurium and, frequently, by vertigo, eventually becoming bilateral and of approximately equal degree in each ear, and rarely progressing to total loss of hearing function, (2) acoustic neuromas, of which it is often the earliest recognized sign, leading to total deafness and extinction of the entire vestibular function on the involved side and loss of reactivity in the vertical semicircular canals on the contralateral side—tumors in the cerebellopontile angle, therefore, are frequently accompanied by vertigo and, in the later stages, by other neurologic signs of a space-taking intracranial lesion, (3) a neoplastic growth, benign or malignant, in the lateral wall of the epipharynx, filling Rosenmüller's fossa and occluding the pharyngeal orifice of the eustachian tube on one side.

Cavernous sinus thrombophlebitis is still the most deadly complication faced by the otolaryngologist. It is, at times, secondary to lateral sinus infection through the petrosal sinuses, but more frequently it follows acute infection of the paranasal sinuses and still more often apparently trivial skin suppurations in the butterfly area—the region of the upper lip, cheeks, and nasal tip. The symptoms are definite and striking: headache, edema of one or both eyelids, chemosis and massive edema of the orbital conjunctiva, proptosis and fixation of the eyeball, rapid spread of all these signs to the opposite side, symptoms of meningitis or septicemia, chill and a septic type of fever, bacteremia, and death in the vast majority of cases. Unfortunately, once the disease is sufficiently established to give signs and symptoms, recovery is rarely obtainable, but prophylaxis should be practiced in all cases of small suppurations in the front of the face. Furuncles should be treated with great respect and never should be squeezed or incised until a definite area of necrosis appears and then only deeply enough to give vent to the purulent secretion. The practice of pulling hairs from the nasal vestibule is utterly to be condemned.

## Conclusions

The early recognition of serious lesions of the nose, throat, and ear can only be obtained by appreciating the anatomic relationship of the nose, accessory sinuses, and ear to the intracranial structures, especially the intimate blood and lymph vascular nutritional supply with tributaries connecting all of these important structures almost as one unit, thus explaining the pathway of infection from one focus to another, bearing the cardinal principle in mind that "inflammation no matter where, is always the same" (Ravdin). Fortunately, physiology (function) also enters into all living processes which, by the infinite principles contained in this cornerstone of medicine, cause numerous modifications. Otherwise, every sinus or ear suppuration would immediately involve the brain, which happily is not the case. Malignancies, to be dealt with properly, must be recognized early. Finally, the normal functioning of the upper part of the respiratory tract will go far in preventing serious lesions of the nose, throat, and ear, with resultant involvement of the eyes, lungs, brain and its coverings, and other loci minores resistentiae.

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# CLINICAL EXPERIENCES WITH STILBESTROL

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ALL biologic processes are essentially chemical in nature. The clarification of this fundamental concept is proceeding slowly but surely to a wider and more significant understanding of our body economy. In no field have the advances been more brilliant than those being made in the realm of sexual physiology. On the basis of the pioneer research of Windaus and others on the skeletal structure and chemical properties of the sterols, biochemists have isolated, determined the chemical structure of, and partially synthesized estrone, testosterone, progesterone, desovycorticosterone, and a host of their derivatives. To this particular group of compounds the general term of steroids has been applied.

Struck by the close structural relationship between estrone and the phenanthrene group of carcinogens, Dodds and his co-workers soon found that the latter group were also weakly estrogenic (Fig 1). The search for a more potent estrogenic substance led this school to a study of p-anol. At first, Dodds and his co-workers believed that this substance was the long-sought desideratum of their modern alchemy. Further study, however, soon revealed that the very potent action of p-anol was in reality due to a contaminant. In a very short time these brilliant chemists isolated and synthesized a new group of compounds possessing marked estrogenic activity.<sup>1</sup>

Among the most potent of these was diethyl-dihydroxystilbene, most commonly known as stilbestrol. In the short space of two years since the preliminary report of the isolation of stilbestrol, an extensive literature, both experimental and clinical, has confirmed the original findings of Dodds and his co-workers that stilbestrol not only duplicates practically every action of the naturally occurring estrone but that it is a more potent estrogen weight for weight. Moreover, stilbestrol retains almost all its potency when administered orally.<sup>1</sup> The consensus of these reports is now widely known.

This report is concerned with the effects of stilbestrol upon the initiation and maintenance

of lactation, in preventing and relieving painful engorgement of the breasts in the puerperal patient, as a "priming" agent for the induction of labor in the pregnant patient, and as an adjuvant in the management of the patient with a menopausal syndrome. Its use in the treatment of senile vulvovaginitis as well as in the management of gonorrheal vulvovaginitis in children is briefly discussed.

## 1 Lactation

Lactation may be defined as the secretion of milk by the mammary gland. The physiologic processes involved are essentially endocrine in nature. The development of the lobule-alveolar system of the glands of the breasts proceeds under the influence of the ovarian hormones.<sup>2</sup> Their effects are more marked during pregnancy. After parturition, the initiation of the process of secretion of milk by the mammary gland is directly dependent upon the presence of the anterior lobe of the pituitary, for hypophysectomy during late pregnancy will prevent milk secretion post-partum.<sup>3</sup> The anterior pituitary is also essential for the maintenance of established lactation, for removal of the hypophysis at this time will result in a rapid and complete cessation of milk secretion.<sup>4</sup>

While the initiation of lactation appears to proceed under purely hormonal influences the maintenance of established lactation requires, in addition to the hormonal factors, a neurogenic one. This is the act of suckling, which reflexly stimulates the release of lactogenic principle by the anterior pituitary.<sup>4</sup> In this manner the continued secretion of milk is maintained.

*Clearly, then, the process of lactation resolves itself into two fundamental mechanisms—first, the initiation of lactation by hormonal factors and, second, the maintenance of established lactation by both hormonal and neurogenic agencies.*

Failure to differentiate clearly these two basic principles may account for much of the apparently contradictory experimental evidence. The latter has been adequately reviewed recently by Turner.<sup>5</sup> In brief, experimental evidence for the inhibition of the onset of milk secretion and suppression of established lactation by estrogens is still far from decisive.

Presented by Dr. A. R. Abarbanel before the Section of Obstetrics and Gynecology, The New York Academy of Medicine, New York City, February 27, 1940.

From the Department of Obstetrics and Gynecology, Morrisania Hospital, New York City (Dr. H. Aronow, director).

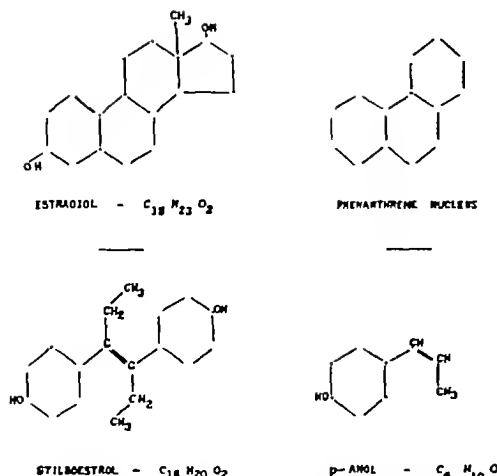


FIG 1 The structural formulas of the natural estrogen, estradiol, the phenanthrene nucleus of certain carcinogens, p-anol and the synthetic estrogen diethylidihydroxystilbene most commonly known as stilbestrol

In spite of the inconclusive experimental evidence, many clinical reports have appeared claiming inhibition or suppression of lactation in the human with estrogens, including stilbestrol. Orally, the dosage has ranged from 3 mg of estrone<sup>6</sup> to 60 mg of stilbestrol.<sup>7</sup> Intramuscularly, doses up to 25 mg of estradiol benzoate have been used.<sup>8</sup> Unfortunately, these reports cannot be properly evaluated, for the baby was removed from the breast simultaneously with the administration of the estrogen, and it is a well-known fact that the maintenance of lactation is dependent upon the nervous stimulus of suckling or its equivalent.

In view of the unconvincing experimental evidence and clinical data, it was decided to investigate the effect of estrogens upon lactation in the human. The estrogen chosen was stilbestrol, since it retains almost all its potency on oral administration while its administration requires a minimum of nursing care. This study was divided into three parts.

I The effect of stilbestrol upon established lactation in the nursing mother was investigated first. For this purpose a group of 50 mothers whose babies were normal in every respect and who gave a history of having adequately nursed a previous child for at least three months were chosen. The babies were allowed to nurse for twenty minutes five times a day. The daily amount of mother's milk was computed from *ante cibum* and *post cibum* weighings. Half the group served as

controls. Stilbestrol, in dosages ranging from 50 to 500 mg, was administered orally over a course of one to four days after lactation had been adequately established for twenty-four to seventy-two hours. Briefly summarized, the results obtained demonstrated no apparent suppression of lactation as judged by the baby's daily weight as well as the total amount of milk secreted daily. Clearly, then, the estrogen, stilbestrol, does not affect established lactation in the nursing human being.

II The effect of stilbestrol upon the initiation of the secretion of milk in the nursing human being was then studied. Using the same control group of 25 mothers and babies as in the first experiment, another group of 25 was selected using the same criteria. Beginning soon after parturition, this test group received from 50 to 1,000 mg of stilbestrol orally, in divided cases, over the course of the first three to ten postpartum days. The babies were allowed to nurse as usual.

Briefly stated, it was found that the onset of lactation on the third or fourth day postpartum was not prevented. It was noted, however, especially when the dosage exceeded 200 mg of stilbestrol that the average normal range of 7½ to 14 ounces of mother's milk daily was not reached until two to seven days after the last dose of stilbestrol, depending upon the total dosage. In every case, however, lactation was adequately established, provided the baby continued to nurse, soon after the stilbestrol was discontinued.

Evidently, then, the estrogen, stilbestrol, does not inhibit the onset of lactation, although in adequate dosage it will delay the appearance of the normal average amount of milk secretion in the nursing human being for two to seven days after the last dose of stilbestrol.

III The next question to be answered, then, was this: since estrogens neither suppress nor inhibit lactation if the baby nurses, will they prevent or relieve painful engorgement of the breasts if the baby does not nurse?

A third group of 65 full-term patients was then chosen. In 55 the indication for not nursing was present at the time of delivery. (It was thought advisable not to include post-abortion cases in this series since in the vast majority the degree of painful engorgement, if any, was mild, and the amount of milk secretion, if any, was slight and transitory.) Fluids were not restricted, while in some cases they were purposely forced.

After trials of varying dosages it was found that the most consistent results were secured with the following schedule. Five milli-

grams of stilbestrol were given twice the first day and then one 5-mg tablet each day for three or four days. The same dosage was continued for five or six days in multiparas who gave a history of having lactated well before. The total dosage, therefore, ranged from 25 to 40 mg.

Twenty of these 55 patients showed some slight transitory heaviness or filling of the breasts anywhere from the fifth to the eleventh postpartum day. This engorgement, as a rule, was practically painless and merely consisted of some slight heaviness of the breasts with an occasional transient secretion of milky fluid. These patients were usually relieved by merely using a moderately loose, uplift breast binder.

In this group painful engorgement was prevented in 48 cases or 87.3 per cent, even though some painless filling of the breasts appeared in 20 or 36.3 per cent. Poor results were obtained in 7 cases or 12.7 per cent.

Of this third group of 65 patients, there was 10 women in whom established lactation had to be interrupted for various reasons. Stilbestrol was given only to those patients who had been lactating well up to the time interruption was necessary. For example, a patient with fissured nipples caused by the baby suckling on a poorly lactating breast was obviously not given hormonal therapy.

The following dosage was used. Twenty-five milligrams of stilbestrol was given as an immediate single dose. Ten milligrams was given the next day, and then 5 mg each day for three days making a total of 50 mg. Marked relief was apparent in 9 (90 per cent) at the end of eighteen to twenty-four hours.

The reason for the apparently confusing clinical reports on the effect of estrogens upon lactation now becomes evident. No attempt had been made to differentiate painful engorgement of the breast from the process of the initiation of milk secretion. Painful engorgement of the breast is not caused by distention of the ducts with milk. Painful engorgement is brought about by vascular and lymphatic stasis.<sup>9</sup>

## 2 Induction of Labor

Because of various indications, most particularly toxemias and postmaturity, it is often desirable to induce labor. In approximately 95 per cent of the cases a Watson induction (castor oil, hot enema, quinine, and pituitrin) yields satisfactory results. The management of the small group of failures (5 per cent), however, constitutes one of the greatest obstetric problems.

The now classic work of Reynolds<sup>10</sup> and others has amply demonstrated that normal uterine contractility is primarily dependent upon estrogens. Since stilbestrol is such an active estrogen, it was used in the induction of labor. Cases were deliberately chosen from that small group of patients who failed to respond to one or more Watson inductions given at intervals of forty-eight hours.

The following case is illustrative of our approach.

M B, white primigravida, aged 36, was admitted seventeen days before term because of a mild albuminuria and a rise in blood pressure. In addition she had a prominent and rigid coccyx, while it was felt that her baby was large. Moreover, x-ray pelvimetry indicated a narrowed midpelvis. Accordingly, she received a full Watson induction during the course of which the membranes ruptured spontaneously. She failed to go into labor. Forty-eight hours later a second Watson induction was given and again she failed to go into labor. Two days later, she received 10 mg of stilbestrol orally every hour for ten doses, making a total of 100 mg. This was followed an hour later by the routine Watson induction. After the first dose of pituitrin, she went into strong active labor. In ten hours she was fully dilated, labor was terminated by a midforceps delivery because of midpelvic arrest of over three hours. The baby weighed 3,715 Gm (8 pounds 2 ounces).

In similar cases where stilbestrol was used in dosages of 100 to 200 mg only as an agent for priming the uterus to such oxytocics as quinine and pituitrin, there was an excellent response in 80 per cent of the patients treated to date, labor having been effected in four to twelve hours in practically all the successful cases. The result has been unsuccessful where stilbestrol was used alone without oxytocics, except in cases of secondary uterine inertia.

It is readily admitted that the evidence here is only strongly suggestive and is far from conclusive. Clinically, however, the results have been encouraging enough to warrant further investigation.

## 3 The Management of the Menopausal Patient with Particular Reference to Stilbestrol

The menopausal syndrome may occur during or after the transition period at which the reproductive function ceases. This phenomenon is a normal physiologic one, characteristic of the process of ageing. In some individuals marked vasomotor instability results. For the purpose of this report, we have taken as our criteria only the characteristic hot flushes

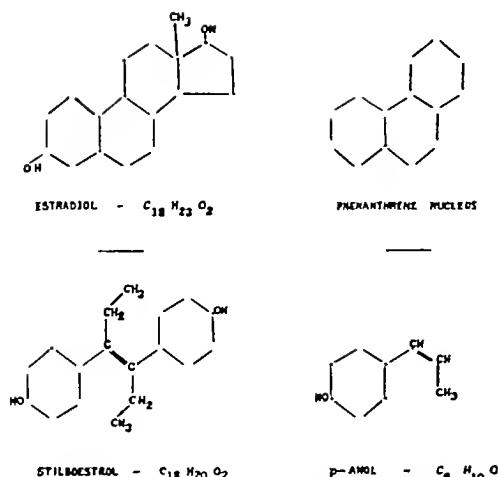


FIG 1 The structural formulas of the natural estrogen, estradiol, the phenanthrene nucleus of certain carcinogens, p-anol and the synthetic estrogen diethyldihydroxystilbene most commonly known as stilbestrol

In spite of the inconclusive experimental evidence, many clinical reports have appeared claiming inhibition or suppression of lactation in the human with estrogens, including stilbestrol. Orally, the dosage has ranged from 3 mg of estrone<sup>6</sup> to 60 mg of stilbestrol.<sup>7</sup> Intramuscularly, doses up to 25 mg of estradiol benzoate have been used.<sup>8</sup> Unfortunately, these reports cannot be properly evaluated, for the baby was removed from the breast simultaneously with the administration of the estrogen, and it is a well-known fact that the maintenance of lactation is dependent upon the nervous stimulus of suckling or its equivalent.

In view of the unconvincing experimental evidence and clinical data, it was decided to investigate the effect of estrogens upon lactation in the human. The estrogen chosen was stilbestrol, since it retains almost all its potency on oral administration while its administration requires a minimum of nursing care. This study was divided into three parts.

I The effect of stilbestrol upon established lactation in the nursing mother was investigated first. For this purpose a group of 50 mothers whose babies were normal in every respect and who gave a history of having adequately nursed a previous child for at least three months were chosen. The babies were allowed to nurse for twenty minutes five times a day. The daily amount of mother's milk was computed from *ante cibum* and *post cibum* weighings. Half the group served as

controls. Stilbestrol, in dosages ranging from 50 to 500 mg, was administered orally over a course of one to four days after lactation had been adequately established for twenty-four to seventy-two hours. Briefly summarized, the results obtained demonstrated no apparent suppression of lactation as judged by the baby's daily weight as well as the total amount of milk secreted daily. Clearly, then, the estrogen, stilbestrol, does not affect established lactation in the nursing human being.

II The effect of stilbestrol upon the initiation of the secretion of milk in the nursing human being was then studied. Using the same control group of 25 mothers and babies as in the first experiment, another group of 25 was selected using the same criteria. Beginning soon after parturition, this test group received from 50 to 1,000 mg of stilbestrol orally, in divided cases, over the course of the first three to ten postpartum days. The babies were allowed to nurse as usual.

Briefly stated, it was found that the onset of lactation on the third or fourth day postpartum was not prevented. It was noted, however, especially when the dosage exceeded 200 mg of stilbestrol that the average normal range of 7½ to 14 ounces of mother's milk daily was not reached until two to seven days after the last dose of stilbestrol, depending upon the total dosage. In every case, however, lactation was adequately established, provided the baby continued to nurse, soon after the stilbestrol was discontinued.

Evidently, then, the estrogen, stilbestrol, does not inhibit the onset of lactation, although in adequate dosage it will delay the appearance of the normal average amount of milk secretion in the nursing human being for two to seven days after the last dose of stilbestrol.

III The next question to be answered, then, was this: since estrogens neither suppress nor inhibit lactation if the baby nurses, will they prevent or relieve painful engorgement of the breasts if the baby does not nurse?

A third group of 65 full-term patients was then chosen. In 55 the indication for not nursing was present at the time of delivery. (It was thought advisable not to include post-abortion cases in this series since in the vast majority the degree of painful engorgement, if any, was mild, and the amount of milk secretion, if any, was slight and transitory.) Fluids were not restricted, while in some cases they were purposely forced.

After trials of varying dosages it was found that the most consistent results were secured with the following schedule. Five milli-

grams of stilbestrol were given twice the first day and then one 5-mg tablet each day for three or four days. The same dosage was continued for five or six days in multiparas who gave a history of having lactated well before. The total dosage, therefore, ranged from 25 to 40 mg.

Twenty of these 55 patients showed some slight transitory heaviness or filling of the breasts anywhere from the fifth to the eleventh postpartum day. This engorgement, as a rule, was practically painless and merely consisted of some slight heaviness of the breasts with an occasional transient secretion of milky fluid. These patients were usually relieved by merely using a moderately loose, uplift breast binder.

In this group painful engorgement was prevented in 48 cases or 87.3 per cent, even though some painless filling of the breasts appeared in 20 or 36.3 per cent. Poor results were obtained in 7 cases or 12.7 per cent.

Of this third group of 65 patients, there was 10 women in whom established lactation had to be interrupted for various reasons. Stilbestrol was given only to those patients who had been lactating well up to the time interruption was necessary. For example, a patient with fissured nipples caused by the baby suckling on a poorly lactating breast was obviously not given hormonal therapy.

The following dosage was used. Twenty-five milligrams of stilbestrol was given as an immediate single dose. Ten milligrams was given the next day, and then 5 mg each day for three days making a total of 50 mg. Marked relief was apparent in 9 (90 per cent) at the end of eighteen to twenty-four hours.

The reason for the apparently confusing clinical reports on the effect of estrogens upon lactation now becomes evident. No attempt had been made to differentiate painful engorgement of the breast from the process of the initiation of milk secretion. Painful engorgement of the breast is not caused by distention of the ducts with milk. Painful engorgement is brought about by vascular and lymphatic stasis.

## 2 Induction of Labor

Because of various indications, most particularly toxemias and postmaturity, it is often desirable to induce labor. In approximately 95 per cent of the cases a Watson induction (castor oil, hot enema, quinine, and pituitrin) yields satisfactory results. The management of the small group of failures (5 per cent), however, constitutes one of the greatest obstetric problems.

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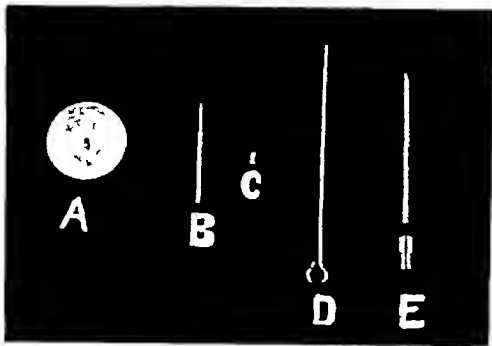


FIG 2 The apparatus used in making pellets is shown at A (the mold) and B (the compressor). At C is shown a 85 mg pellet of stilbestrol which is to be placed in the No 12 needle, E. The needle is then inserted subcutaneously over the lateral aspect of the thigh after first making a wheal in the skin with local anesthetic. The pellet is then deposited in the subcutaneous tissue by plunging the trocar, D, home. It is to be noted that the trocar is slightly longer than the needle.

Very important, indeed, in the management of the menopausal patient is the correct diagnosis. This is frequently rather difficult, and as a result one may be forced to judge the correctness of the diagnosis by the response to therapy. Since it is a well-known fact that the vasomotor phenomena of the menopause are very greatly influenced by the patient's own psyche, one must delve not only into the patient's medical history but also into her social and economic problems in order to evaluate the patient as a whole, *not* as a diagnosis.

When the conclusion is tentatively made that the patient is suffering from a true menopausal syndrome, the following plan of therapy is instituted in the "menopause" clinic. Most important, we believe, is the axiom that each patient must be completely individualized. After securing a detailed history, the patient and her story are carefully evaluated. Therapy can be successful only if we treat the patient with the menopausal syndrome and not the menopause.

Her condition is carefully explained to her. Her complete confidence and cooperation are sought. A simple, sane, hygienic regimen, mental as well as physical, is suggested. In addition, she is given adequate sedation, barbiturates or bromides, and whatever other medication may be deemed necessary. If, after a fair trial of two to four weeks on this therapy, the vasomotor symptoms still persist in unabated form, hormonal therapy is instituted. As a result of this procedure only about 35 per cent of the patients have re-

quired the use of stilbestrol. This series comprised 75 cases treated with stilbestrol.

Two methods of administration have been utilized. These are the oral route and the subcutaneous injection of pellets of crystalline stilbestrol. Experience has shown that small doses of stilbestrol are quite effectual in controlling the hot flushes. The patient is given a 0.1-mg tablet two or three times a day. As a general rule this dosage has been sufficient. If necessary the dose is gradually increased to 1 mg a day, rarely more. If the patient gives a history suggestive of gall bladder disease, constipation, or a tendency to nausea or vomiting,  $1\frac{1}{2}$  grains (100 mg) of a bile acid, desoxychoic acid, have been prescribed with each dose. When the criteria mentioned above are used, therapeutic results have been uniformly good. It is felt that this is so because the patient as a whole, not the menopause, has been treated.

In a small series of cases, pellets of crystalline stilbestrol have been injected under the skin of the thigh. The following indications for the use of pellets have been set forth. First, it must be shown that the patient will respond to stilbestrol. Second, she must experience a return of symptoms after therapy has been discontinued. Experience has shown that pellets give the smoothest and by far the best response. In addition, there is but one injection. The usual dosage employed has been pellets totaling approximately 15 mg. These remain effective for a period of two to three months. The pellet is placed in a No 12 needle and then injected under the skin of the lateral aspect of the thigh, after first making a small wheal in the skin with a local anesthetic. The trocar, which is slightly longer than the needle, is then pushed home, forcing the pellet out. The needle is then withdrawn (Fig 2).

Untoward reactions to stilbestrol have been uncommon. In fact, the drug has never been discontinued in any patient primarily on the basis of so-called "toxic" effects. This may be attributed to the proper selection and management of the cases. Nausea or some feeling of gastrointestinal distress was noted in about 18 per cent of the cases. The higher the initial dosage, the more frequent were the complaints. Accordingly, the patient was started out on 0.1 mg a day, and the dosage was gradually increased up to 1 mg daily if symptoms warranted it. In rare instances the dose had to be raised to 5 mg for a short period of time in order to control the hot flushes. As a result of this schedule of dosage,

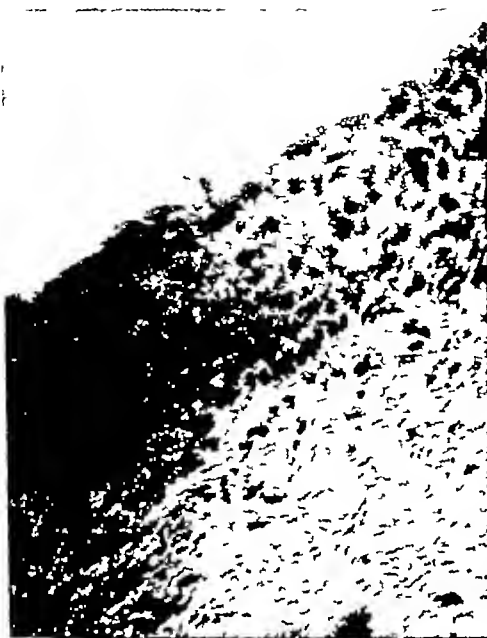


Fig 3a



Fig 3b

Fig 3a Section through biopsy of vagina, from a case of pruritis associated with senile (atrophic) vaginitis  
 Fig 3b Fourteen days later Response of vaginal epithelium to stilbestrol ointment containing 20 mg per ounce Pruritis was markedly relieved

nausea has become a very infrequent complaint, occurring in but 4 per cent. It is insisted that the patient have a bowel movement daily. The use of bile salts or acid preparations has been found to be particularly useful in preventing or so allaying gastrointestinal complaints that the latter become insignificant.

Patients suffering from menopausal syndrome are quite prone to gastric upsets. Many will volunteer the information that they frequently feel nauseous after a particularly severe flush. Recently 2 cases of nausea and vomiting from tablets of phenobarbital and 1 from elixir of triple bromides were seen in a single week. One patient complained of nausea and vomiting after taking two 0.1-mg tablets of stilbestrol. She, however, became nauseous and vomited placebo tablets which were identical in appearance to the ones containing stilbestrol. Two of our cases complained of nausea and vomiting before therapy with stilbestrol was started. Concomitant with relief from their vasomotor symptoms, the gastrointestinal complaints disappeared. It is interesting to note that large doses of the naturally occurring estro-

gens have been noted not infrequently to cause nausea and even vomiting.<sup>11,12</sup>

Uterine bleeding as a result of stilbestrol therapy occurred in about 10 per cent. This was particularly evident when the daily dose was 1 mg or more. It generally occurred when the time interval between doses was being increased or the daily dosage was being decreased. It also occurred in 1 patient who had received a large amount of stilbestrol percutaneously for kraurosis vulvae. This type of bleeding is similar to estrin-privea bleeding in the monkey. One case of apparently true "menopausal migraine" was successfully relieved.

There were no other so-called "toxic" reactions noted in this carefully studied group of 75 patients.

#### Senile Vulvovaginitis

In those patients complaining of pruritis vulvae, all local and constitutional causes for the irritation were first excluded. In particular, diabetes mellitus and such functional disorders of the bladder associated with incontinence of urine as a marked cystocele were ruled out. Palliative treatment with

mild antipruritic ointments was first tried. If, however, the itching was not relieved, hormonal treatment was started. By far the smoothest, quickest, and best response was secured with the use of the percutaneous route of administration. An ointment base of hydrous lanolin containing 10 to 20 mg of stilbestrol per ounce was prescribed. In cases of simple senile vaginitis the therapeutic response was uniformly excellent (Figs 3a and 3b).

*Gonorrheal Vulvovaginitis*—In treating this condition in children, stilbestrol proved as efficacious as the natural estrogens, both in the form of local suppositories and when administered orally. The dose in either case was 0.1 mg. The oral route seems the one of choice, since the children readily take the "pink" candy pills, whereas the mother usually has to struggle to insert the vaginal suppository. Similar results have been reported by Karnaky.<sup>11</sup>

### Comment

There still remains to be explained why the pregnant and puerperal patient can tolerate dosages of stilbestrol ranging from 250 mg a day to 1,500 mg a week with scarcely any side effect except occasional dizziness,<sup>12</sup> while the menopausal patient appears to be sensitive to doses of 5 mg a day. Perhaps some metabolic factor is altered at the time of the menopause. Study along these lines is now in progress.

The significance of the fact that stilbestrol is not inactivated by the liver<sup>13</sup> has not been duly appreciated. Moreover, it has been shown that it takes from five to ten days before a given dose of stilbestrol finally disappears from the urine.<sup>14</sup> In addition, 20 to 25 per cent of a given dose of stilbestrol may be recovered from the urine as compared to 1 to 2 per cent of estrone.<sup>13, 15</sup> In other words, stilbestrol is easily capable of a cumulative action. It is logical, therefore, to use small doses. A physiologic, therapeutic effect is desired, not a pathologic one, presumably from relative overdosage.

The large percentage of so-called "toxic" effects reported by some workers<sup>16</sup> has not been confirmed either in the clinic or private patients of our group. In fact, there have been reported more undesirable side effects with digitalis, neoarsphenamine, ammonium chloride, ferrous sulfate, and sulfapyridine, to mention but a few commonly used drugs. More discriminate selection of patients and more judicious use of proper dose schedules

in the future will bring about a decided reduction of undesirable side effects.

### Summary

1 The synthetic estrogen, stilbestrol, in dosages up to 500 mg does not affect established lactation in the nursing human being.

2 Stilbestrol, if given in doses up to 1,000 mg (1 Gm) in divided doses beginning soon after parturition, will not prevent the onset of lactation in the nursing human being, although the appearance of the average normal amount of milk secretion will be delayed until two or six days after the last dose of stilbestrol, provided the baby continues to nurse.

3 Stilbestrol in doses of 25 to 40 mg prevented painful engorgement of the breasts in 87.3 per cent of 55 nonnursing mothers. A delayed transitory heaviness or filling of the breasts, usually painless, was noted in 20 of these cases anywhere from the fifth to eleventh postpartum day.

4 Stilbestrol in dosages of 100 to 200 mg acted as an excellent "priming" agent for the uterus in 80 per cent of the cases where one or more previous medical inductions of labor, including pituitrin, had been unsuccessful. Used alone, without oxytocics, stilbestrol did not precipitate labor.

5 The pregnant and puerperal patient is remarkably tolerant to stilbestrol in doses from 250 mg a day to 1,500 mg a week. No toxic effects were noted even in patients with eclampsia or fulminating toxemia and evident renal and liver damage.

6 In the management of the patient suffering from a menopausal syndrome, stilbestrol, where indicated, is an effective adjuvant in controlling the vasomotor phenomena. Beginning with 0.1 mg once or twice a day, the dosage is gradually increased if necessary. With discriminate selection of cases and judicious use of dosage schedule, uniformly gratifying results were secured. The use of bile salts or acids tended to prevent or allay untoward gastrointestinal complaints.

7 The use of pellets of crystalline stilbestrol injected under the skin of the thigh appears to offer great promise of being a most ideal form of therapy in the menopausal patient, provided the proper indications for this type of therapy are carefully observed.

8 Stilbestrol, in ointment form in a concentration of 10 to 20 mg per ounce, applied locally in patients with simple senile vaginitis associated with pruritus vulvae, yields uniformly good results.

9 Stilbestrol, in the dose of 0.1 mg per os

or in the form of vaginal suppositories, proved efficacious in the treatment of gonorrheal vulvovaginitis in children \*

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1000 Grand Concourse

We wish to thank Drs Harry Aranow and Milton J Goodfriend for their valuable advice and encouragement, and to Dr S Appel we are indebted for data on the use of stilbestrol in gonorrheal vulvovaginitis. We are especially grateful for the splendid cooperation of the nursing staff in general and to the following in particular—Miss E Andes, Mrs V

\* Dr J A Morrell of E R Squibb and Sons supplied stilbestrol in the form of crystals tablets and vaginal suppositories.

Mr A A Ebby of Ayerst McKenna and Harrison, supplied stilbestrol in the form of soft gelatin capsules.

The bile preparations used were desoxycholic acid (supplied as Degalol by Riedel-de Haen) and bile salts (supplied as Crescifel by Ayerst McKenna and Harrison)

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## FIGHT THE GOOD FIGHT WITH ALL THY MIGHT

*Congressional Intelligence, Inc.*, reports that a national health program of unprecedented proportions will be presented to the new Congress. In defiance of the facts, this program will be predicated on the poor health conditions alleged to have been proved by the number of rejections for military service. *Congressional Intelligence* anticipates that "with the label of defense some such program would be almost certain of Congressional approval."

Mrs Roosevelt's recent remarks lend substance to the prediction that national defense will be used as a pretext to induce Congress to adopt some form of state medicine. Actually, remarks the New York *Medical Week*, the only prevalent health needs demonstrated by Army reports to date are for better public health education, with emphasis on hygienic habits and

early recourse to medical care and more widespread utilization of available prophylactic facilities. Nevertheless, there is little doubt that those interested in socialized medicine will seize the opportunity to try and put over their pet scheme in the name of total defense.

Physicians cannot afford to wait until this danger is upon them to combat it. They must rather seek to forestall any such move by immediate contact with their representatives in Congress, letters to the press, and above all a widespread educational campaign to make the public understand the compelling reasons for medical opposition to state control. For those practitioners who have not the time nor the temperament for campaigning, the three-cent-a-day club of the National Physicians' Committee is an effective way of participating in the fight

## IT'S NOT PASSION

Picked by W L A from Chicago News

If she calls you to her bedroom  
In the hours of the night,  
And thru her half closed eyelids  
You detect a telltale light,  
If her bosom heaves tumultuously  
Betraying her devotion,  
If her nostrils dilate widely  
With each palpitating breath,  
And her shapely body trembles as  
Might one approaching death,  
If she beseeches and implores you  
As she grasps your trembling hand  
To alleviate her suffering—the  
Torture of the damned—  
THAT'S ASTHMA

—J A M A

## LECTURES ON TRAUMATIC SURGERY

A course of lectures on Traumatic Surgery has been arranged for the Fulton County Medical Society at Gloversville and Johnstown, alternately, at 9 15 P.M. The course is as follows: February 21, "The Treatment of Burns and Hand Infections," by Dr Emmett A. Dooley, February 28, "The Care of Head Injuries," by Dr Carl A. Peterson, March 7, "The Treatment of Fractures of the Femur and Humerus," by Dr Porteous Johnson, March 14, "Abdominal Injuries," by Dr David M. Goldblatt, March 21, "The Treatment of Fractures of the Forearm and Lower Leg," by Dr Walter D. Ludlum, Jr., March 28, "Bursitis, Strains and Sprains," by Dr Willis W. Lasher, and April 4, "Fractures in General," by Dr Henry H. Rutter, all of New York City.

# Diagnosis

THIS new JOURNAL section will carry case reports that have been made the subject of discussion from the point of view of the diagnostic process needed and the post-mortem evidence. All the cases will be selected because of some unusual interest. Two hospitals in this city have very kindly offered to supply this material, each six times a year. Reports from the New York Post-Graduate Hospital will alternate with reports from Bellevue Hospital, Fourth Medical Division.—*Editor*

## CLINICOPATHOLOGICAL CONFERENCES\*

### FOURTH MEDICAL DIVISION OF BELLEVUE HOSPITAL

#### History

Patient was an 85-year-old white man, of Russian birth, a tailor by occupation, admitted with history of chills and fever of four days' duration. Ambulance surgeon obtained further history from his physician of petechial eruption that appeared and then disappeared. Present illness began nineteen days previously, patient was bitten, immediately below the left eye, on the cheek, by a rat. There was an indefinite history of other persons in the same house being bitten by rats with no subsequent symptoms. The bite was followed by considerable bleeding but in two days had healed. Four days prior to admission, patient suffered fever and chills, temperature reaching 103 F, and it was accompanied by semistupor, anorexia, but no vomiting. Past history revealed red urine for the past four months and bronchitis ten years previously.

Temperature on admission was 99 F, pulse 80, respirations, 22, and blood pressure was 120/50. Patient was very sluggish mentally but in no acute distress. Skin was dehydrated, no eruptions were present. There was a small scabbed indurated area below the left eye. Pupils of the eyes were equal and reacted to light and accommodation. There was some periorbital puffiness.

The ears, nose, and mouth were negative. Tonsillar pillars were red and injected. There was moderate swelling of the posterior cervical nodes on the left. Chest was hyperresonant and emphysematous throughout. Heart was not enlarged to percussion, sounds were distant. A soft, blowing systolic at the apex with reduplication of the second sound was present. Abdomen revealed liver to be one finger breadth below the costal margin and

not tender. No other masses or tenderness were noted. Rectal examination revealed prostate to be enlarged bilaterally with right lobe greater than left, firm and smooth—no nodules or tenderness. Extremities revealed no edema or clubbing. Reflexes were physiologic except for absent abdominals and ankle jerks.

Laboratory data included a chest plate on day of admission which showed hypervascularization throughout left lung without any definite infiltration or consolidation. Chest plate two days later showed no pneumonic consolidation. The heart was not enlarged, athermatous plaques in the knob of the aorta. Electrocardiogram on admission showed sinus rhythm, marked myocardial changes with M-shaped R waves, inverted T<sub>1</sub>, T<sub>2</sub>, and T<sub>4</sub>, with slight left axis deviation.

On the day of admission the red cell count was 3,720,000, hemoglobin 80 per cent, leukocytes 11,350, of which polymorphonuclears were 85 per cent, monocytes 5 per cent, and lymphocytes 10 per cent. On the day of death red cell count 3,930,000, hemoglobin 72 per cent, leukocytes 28,900, with polymorphonuclears 83 per cent, monocytes 6 per cent, and lymphocytes 11 per cent. The urine showed a specific gravity of 1.020–1.023, there was no albumin or glucose but an occasional white blood cell. E. S. R. on the fifth day was 80 mm per hour. Blood N P N on admission was 39, on day of death was 82, blood sugar on admission was 87, blood creatinine was 2.4. Blood Wassermann was negative. CO<sub>2</sub> combining power was 62 per cent. Agglutination tests with typhoid (O and H), para (A and B), and melitensis were negative. The Felix-Weil reaction was negative. Blood smear on the third day was negative for malarial parasites. Injection of blood into two guinea pigs gave no reaction. Spinal fluid showed pressure to be slightly increased, protein, 37.5, sugar, 65.

Patient on admission was in no acute dis-

\* The conferences are held every Thursday morning at 9:00 A. M. in the amphitheatre of the C and D building at that hospital. These sessions are included as one of the exercises in the course in postgraduate medicine given on the division under the auspices of New York University Medical College. The editorial staff for these reports consists of Dr. Charles H. Nammack, Dr. Harry A. Solomon, Dr. Emanuel Appelbaum, and Dr. David M. Spain.

tress but was perspiring profusely and was very sluggish mentally. There was no dyspnea. Patient had a chill while being examined. Lungs were clear. Neurologic examination was essentially negative. Through the next few days the patient gradually became more stuporous. The sputum was negative for acid-fast organisms, and patient was given infusions of 5 per cent glucose in saline. Temperature rose to 101 F and varied between 102 F and 100 F, death occurring at 102 F. Pulse remained in neighborhood of 80 to 90 per minute, rising to 120 per minute just before death. On the penultimate day, the patient became dyspneic requiring nasal oxygen. Coarse moist rales appeared in both bases and a definite right hemiplegia of the upper motor neuron type with positive Babinski was noted. There was moderate nuchal spasm and a positive Brudzinski sign. A few ecchymotic areas appeared on the forearms. There was a right subconjunctival hemorrhage. The left forearm suddenly became cold, the nails cyanotic, and no pulse was felt below the elbow. The arm was wrapped in cotton and a hot water bottle was applied. Several petechial hemorrhages were noted in the conjunctivae. On the last day there was still no pulse in the forearm but it was now warm. The nails were still cyanotic. The right hemiplegia was maintained. The meningeal signs were less marked and the patient developed marked pulmonary edema and coma. Hypertonic glucose and amnophyllin were given intravenously but produced only temporary improvement after which the patient died.

## Discussion

DR EMANUEL APPELBAUM. The diagnoses considered in this case were (1) coronary artery disease, with recent closure and mural thrombosis, (2) rat-bite fever with septicemia and vegetative endocarditis. We leaned toward the latter. In order to shed more light on the clinical interpretation of this case, it is necessary to discuss briefly the bacteriologic and clinical features of rat-bite fever. Unfortunately, both the bacteriology and the clinical status of this disease are at present in a state of confusion.

In regard to the bacteriology, the infecting agent recovered has usually been one of two organisms.

A. In the majority of instances a *Spirillum* known as *Spirillum minus* (*Spirochaeta morsus muris*) has been recovered. The organisms may be found on dark-field examina-

tion of infected tissue but is best demonstrated by inoculation of the patient's blood or tissue into animals. It is not obtained by blood culture. It is to be noted that *Spirillae* are normally found in mice.

B. In a smaller number of cases an entirely different organism, *Haverhillia multiformis* (*Streptobacillus moniliformis*) has been found. It is obtained by blood culture.

Which of the two organisms under consideration is the etiologic agent of rat-bite fever is a controversial subject.

Clinically, we have to consider these entities:

A. Oriental sodoku which is always caused by a rat bite and is sporadic in occurrence. The etiologic agent is *Spirillum minus*. The salient clinical features are (1) rat bite, (2) healing of the bite, (3) an incubation period of five to twenty-eight days, (4) recurrence of the primary lesion which becomes indurated, red, swollen, tender, and occasionally ulcerated but never shows pus, (5) a local lymphangitis lasting one to two weeks, (6) regional lymphadenitis, (7) development of chills and fever of a remitting or relapsing character, (8) the development during the first week of a purplish maculopapular rash with large, discrete lesions, (9) frequently there is a positive Wassermann.

B. *Haverhillia multiformis* septicemia due to rat bite. The etiologic agent of this case is the *Haverhillia multiformis* (*Streptobacillus moniliformis*), which is obtained by culture from the blood or joint fluid. The clinical features are similar to sodoku with the following exceptions: (1) primary lesion may not recur, (2) the cutaneous lesions are less striking and apt to be morhiliform or petechial, (3) the fever is less apt to be relapsing in type, (4) arthritis, very common.

C. Haverhill fever. This refers to an epidemic which occurred in Haverhill, Massachusetts, in 1926. The etiology was the *Haverhillia multiformis* which was recovered from the blood by culture. The clinical features were a sudden onset with chills and fever of a relapsing type, a morhiliform eruption and the presence of arthritis. It was probably a milk-horne attack.

Are sodoku and *Haverhillia multiformis* septicemia different disease entities? This is at present controversial.

In our case, the history of rat bite, the presence of cervical adenopathy, a report of a transitory petechial eruption, the lack of recurrence of the primary lesion, the presence of fever, but not of the relapsing type, favored the diagnosis of rat-bite fever with *Haver-*

hilia multiformis septicemia, although there was no evidence of arthritis. The presence of endocarditis was also postulated. This too, would favor the Haverhillia multiformis etiology, since there is one report in the literature of a case of vegetative endocarditis due to the Streptobacillus moniliformis and there is no record, to the best of my knowledge, of a Spirillum causing such a lesion.

DR HENRY C FLEMING I should like to mention Dr Blake's case from the Peter Bent Brigham Hospital which showed a vegetative endocarditis on necropsy and a streptothrix isolated from the vegetations on the mitral valve. In this case, Blake also isolated a streptothrix both in blood cultures during the life of the patient and at postmortem. If our case is one of rat-bite fever, then arsenicals might have been used.

DR APPELBAUM Dr Blake's case is the one I referred to in my discussion.

DR PHILIP GOLDSTEIN There was recently another case in a 2-year-old child who was bitten on the forehead by a rat. This child became ill, listless, ran a remittent type of fever, and finally died with a convulsion. At postmortem, as far as I know, there were no gross findings of any note.

DR MAX TRUBEK I think that one should strongly entertain the possibility of this case being one of ordinary bacterial endocarditis.

Present in the audience was a fourth-year medical student, from the College of Physicians and Surgeons, who had suffered from rat-bite fever, and he was called on to discuss his case *vide* article by Dr M H Dawson and G L Hobby (by invitation), Ph D.\*

### Presentation of Pathology

Primary	Acute bacterial endocarditis (possible Spirillum etiology)
	Cerebral embolism and infarction
Secondary	
Heart	Acute ulcerating bacterial vegetation—mitral valve Sclerosis of the aortic and mitral valves Coronary atherosclerosis Suppurative myocarditis—localized by extension
Lungs	Congestion and edema Emphysema
Spleen	Chronic perisplenitis
Kidneys	Multiple infarctions Nephrosclerosis

Bladder	Papilloma
Prostate	Hypertrophy Infarction
General	Anemia Conjunctival petechiae

DR DAVID M SPAIN The postmortem examination showed a fairly large, bulky, friable vegetation arising from the auricular surface of the posterior mitral valve leaflet. The vegetation invaded the mitral ring and extended into the myocardium to the epicardial surface of the heart. There was an infarction of the left side of the brain which involved the putamen, external capsule, and claustrum. Infarcts were also present in the kidneys and prostate. The clinical finding of hematemia was explained on the basis of a bladder papilloma. The original rat bite was well healed. In a typical case of rat-bite fever, this is usually not so. There have been very few autopsied cases of rat-bite fever. The histologic findings in these cases have revealed no specific lesions. The unhealed bite usually reveals a nonsuppurative granuloma. Skin lesions show dilated blood vessels and lymphocytic infiltration, while the viscera merely show changes reported in any febrile illness. In this case, macroscopic examination showed the histologic picture of infarction and the vegetation consisted of thrombotic material with many polymorphonuclear leukocytes, lymphocytes, early calcification, and minimal fibroblastic proliferation.

The bacteriologic workup was as follows (performed by two independent bacteriologists). Direct smears of the crushed vegetation stained with Giemsa and Gram stains revealed a Spirillum-like organism resembling the Spirillum minus. No other organisms were found. A Levaditi stain of the fixed tissue vegetation revealed a similar organism.

A significant fact is that no bacteria were cultured from the antemortem and postmortem blood and that no bacteria were found either on direct smear or culture of a vegetation of this type. This is a most unusual finding in this laboratory. This fact coupled with the above evidence leads one to make the assumption that the rat bite and, more specifically, a Spirillum was the possible etiologic agent of this endocarditis. It should be mentioned that Bayne-Jones claims the Spirillum has never been cultured directly from the blood. It also would have been wiser to inject the antemortem blood into a white mouse rather than into guinea pigs. Further study is being continued on laboratory animals with the hope of confirming our findings.

\* Rat-Bite Fever (From the Edward Daniels Faulkner Arthritis Clinic.) Transactions of Association of American Physicians, 1939

# Maternal Welfare

## Committee's Program Adopted by Council

A RECENT study by the Maternal Welfare Committee, a subcommittee of the Council Committee on Public Health and Education of the Medical Society of the State of New York, revealed the apparent need for a comprehensive statewide maternal welfare program. The survey showed a comparatively high maternal mortality rate in certain communities. There was also evidence that drastic reduction in maternal mortality rates had been accomplished in other communities, apparently resulting from efforts of county society programs. The conclusion drawn was that certain counties might well establish programs aimed at reducing maternal mortalities and that others should continue their efforts so as to maintain progress already accomplished.

The committee recommended to the council that it be permitted to set up an Advisory Committee on Maternal Welfare to consist of twelve regional chairmen, each representing certain geographical areas of the state (This committee is listed below.) It further recommended that full cooperation with the State Department of Health be obtained. Also it was suggested that the section on Maternal Welfare be continued in the NEW YORK STATE JOURNAL OF MEDICINE. These recommendations were approved by the council.

It is planned in the very near future to set up a similar Advisory Committee to deal with pediatric aspects of the problem.

The functions of the regional chairmen as outlined by the Maternal Welfare Committee are as follows:

- 1 To establish contact with the various county society maternal welfare committees and to assist in county programs in any possible manner
- 2 Survey maternity facilities in district and report with recommendations and suggestions
- 3 Become familiar with district statistics on maternal and child welfare.
- 4 Plan district postgraduate refresher courses
- 5 Distribute literature when available
- 6 Stimulate formation of blood banks, plasma banks, or lists of available blood donors
- 7 Awaken public interest by means of available publicity methods
- 8 Organize obstetric conferences

The Maternal Welfare Committee recommends the obstetric conference as the best available method of practical postgraduate education. It is the aim to establish such conferences in each county, groups of counties, or districts.

The conferences consist principally in the presentation of actual maternal mortalities. Such mortalities are presented in the form of carefully prepared, concise, case reports. Patient, physician in attendance, and locality of the mortality are kept anonymous. Cases may be exchanged with another county, reviewed only after considerable time has elapsed, or, on re-

quest, will be provided by the Committee on Maternal Welfare from elsewhere in the state.

The only purpose of the obstetric conference is self-education. Hence, preventability should not be assigned and no statistics on preventability kept. Every physician in the community is invited to attend.

Experience has shown that the anonymous type of presentation lends to an open discussion of cases. The method is available in every community and is an excellent mechanism for the postgraduate education that every physician desires but often finds hard to obtain.

Each regional chairman is familiar with the *modus operandi* of the obstetric conferences and will be available to assist any local group in establishing such conferences. The natural medium for such presentations would seem to be the county medical society.

New York State is in need of a definite maternal welfare program. Such a program should obviously be under the supervision of the Medical Society of the State of New York. However, the actual programs must be conducted by the county medical societies. The regional chairmen should serve the purpose of correlating the activities of the local groups with that of the State Society. The Maternity, Infancy, and Child Hygiene Division of the New York State Department of Health is cooperating and affording valuable assistance in the program.

It is the earnest desire of the Maternal Welfare Committee that all physicians in New York State who include any maternity work in their practices, as well as others interested in maternal welfare, will familiarize themselves with the objectives of this program. Any advice or recommendations will be greatly appreciated and given due consideration. Each community, of necessity, must be interested in its local child and maternal mortality rates. It is hoped that each county society will establish a definite maternal welfare program.

### ADVISORY COMMITTEE ON MATERNAL WELFARE

District	Counties	Regional Chairman
1	New York Richmond Bronx	DR. GEORGE W. KOSMAK New York City
2	Kings Queens Nassau Suffolk	DR. HARVEY B. MATTHEWS Brooklyn
3	Westchester Rockland Dutchess Putnam Orange	DR. JULIAN HAWTHORNE Rye
4	Schenectady Fulton Montgomery Schoharie Greene Ulster	DR. WILLIAM M. MALLIA Schenectady

## ADVISORY COMMITTEE ON MATERNAL WELFARE (Continued)

District	Counties	Regional Chairman	District	Counties	Regional Chairman
5	Albany Washington Saratoga Columbia Warren Rensselaer	DR JOSEPH O'C KIERNAN Albany	9	Broome Tioga Chenango Otsego Delaware Sullivan	DR STUART B BLAKELY Binghamton
6	Clinton Essex Franklin St Lawrence	DR ELMER WESSEL Plattsburgh	10	Monroe Orleans Wayne Livingston Ontario Yates Seneca	DR WARD L EKAS Rochester
7	Jefferson Lewis Herkimer Hamilton	DR J LAMONT CROSSLEY Watertown	11	Chemung Schuyler Steuben Tompkins Allegany	DR. REEVE SCOTT HOWLAND Elmira
8	Onondaga Oswego Oneida Madison Cortland Cayuga	DR EDWARD C HUGHES Syracuse	12	Erie Niagara Chautauqua Cattaraugus Genesee Wyoming	Not appointed

## "MORE OR LESS OF A QUACK"

"A wholesome effect on the shady fringe" is expected by *Minnesota Medicine* to result from the strong rebuke administered by Judge Loevinger of the district court to a chiropractor convicted of the illegal practice of medicine in St Paul. The man was a railway postal clerk who did business as a healer in his spare time. A young divorcee, of 19 summers, went to him for "delayed menstruation," which he tried to remedy with an electrical device. She became ill, was taken to a hospital, and demanded \$300 from the postal-clerk-chiropractor, who appealed to the police for protection. Instead, he was arrested, convicted, and fined \$200, which he promptly paid. Said the judge:

"You have been licensed by the state to practice a particular form of healing. You have not been licensed to practice any other form of healing. When you undertake to perform any other form of healing beyond that which you have been licensed, you are perpetrating a fraud upon your patients as well as violating the law. It is unfortunate that when some people are in physical trouble, when they are ill or have any other physical difficulty, that instead of going to a person who is qualified to treat them they are likely to go to some person who is more or less of a quack in that particular line. I am not reflecting on your ability as a chiropractor, but on any other line you are just a quack. You have no authority to practice medicine and anyone who pays you any money therefor pays it to you under false pretense. It is the purpose of the law to discourage that sort of thing so that people with pain and suffering shall not be preyed upon by people who are not qualified to render competent services."

"Should you attempt to practice any other form of medicine than chiropractic and appear in court again I suspect the court will be considerably less considerate than I think it has been this time."

## TO SEND BLOOD PLASMA TO BRITAIN

How new techniques for collecting and transfusing blood, utilizing plasma rather than whole blood, have made it possible for thousands of Americans to donate their blood for the British cause in the European war is told by Edith Roberts, Kokomo, Indiana, in *Hygeia, The Health Magazine*.

By the use of plasma, the liquid portion of the blood after the red and white cells are removed, a healthy donor may aid a wounded sufferer thousands of miles away. "The difficulty of direct blood transfusion at the scene of any great disaster which shatters human bodies is evident," the author says. "It is almost equally impossible to effect the necessary transfusion with blood which has been donated and preserved, for the simple reason that, after a very few days outside the body, whole blood deteriorates, its cells break down, and it cannot be transported and used."

"This is where plasma enters the picture. For plasma does not have to be 'grouped' or 'typed' as whole blood must be before transfusion, else the result may be fatal. Plasma from one human being can be given to any other; plasma can be transported long distances and preserved for a year or more. It can even be dried and redissolved."

"Under the fearful stress of the present conflict, there is being developed and perfected an astounding technic for collecting and distributing human plasma in quantity."

"At present blood plasma is being accepted from donors only in New York City. But as the technic of its collection in quantity is perfected, the movement will be extended from coast to coast."

"Some plasma is being prepared in England, but the bulk of it must come from us. For in Britain's crowded hospitals there is too little time or space to devote to the careful, tedious process."

There are said to be more than five thousand quack "cancer-cures" on record

Every calling is great, when greatly pursued.  
—Mr Justice Holmes

# Medical Preparedness

## Examinations for Appointments in the Medical Corps of the U S Navy

THE Surgeon General of the Navy, Rear Admiral Ross T McIntire (M C), U S N, announces the next examination for appointments as commissioned officers in the Medical Department of the Navy will be held at all of the larger naval hospitals and at the Naval Medical Center, Washington, D C, on May 12 to 15, inclusive, 1941. Applicants for appointment as Assistant Surgeon, effective approximately two months from date of examinations, may now request authorization to appear for examination. Requests for such authorization should reach the Bureau of Medicine and Surgery prior to April 21, 1941.

Applicants for appointment as Assistant Surgeon are required to be citizens of the United States between the ages of 21 and 32, graduates of Class "A" medical schools, to have had at least one year of intern training in a hospital accredited for intern training by the Council on Medical Education and Hospitals of the American Medical Association, and to meet the physical and other requirements for appointment.

The Medical Corps of the Navy is being increased in strength proportionate to the expanding Navy and United States Marine Corps. Service for medical officers is active professionally and attractive in assignments at sea, on shore duty, and on foreign shore stations. In the normal rotation of assignments every practicable consideration is given the officer's preference for the type of duty he desires. The Naval Medical School at the Naval Medical Center, Washington, D C, offers a course of postgraduate instruction and instruction in those branches of medicine which apply particularly to naval service. Under normal conditions newly appointed officers are assigned to this course upon their

entry into the service or during their first few years of naval service.

Naval medical officers are encouraged to develop a specialty after they have completed their first cruise at sea. Shortly before completion of his sea duty, the Navy doctor may request special training in the Medical Department specialty in which he is interested. Such requests are acted upon by a special board in the Bureau of Medicine and Surgery, and, if approved, the Navy doctor is sent to a hospital for training and experience in that specialty for one year. Upon completion of this training, he is assigned to postgraduate instruction at one of the many medical centers in the United States for a period up to one year after which, insofar as is practicable, he is retained in that type of duty. Some of the specialties in which qualifications may be obtained are surgery, medicine, otolaryngology, x-ray, laboratory, pathology, public health, psychiatry, deep-sea diving, aviation medicine (flight surgery), gas warfare, and tropical medicine. Several officers have been trained in research particularly applying to problems arising in submarine and aviation activities.

The naval service affords excellent opportunities for professional advancement. Medical officers receive the same pay and allowance as other officers of the Navy in corresponding ranks and the equivalent amount of service.

A circular of information for applicants for appointment as medical officers of the Navy, containing full information regarding physical requirements, professional examinations, rates of pay, and promotion and retirement data may be obtained by addressing the Bureau of Medicine and Surgery, Navy Department, Washington, D C.

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### BRITAIN TO LICENSE UNITED STATES PHYSICIANS

Canadian and United States physicians are being licensed by Great Britain for the duration of the war, the regular London, England, correspondent of the *Journal of the American Medical Association* reports.

"The government has made an order under the Emergency Powers Act, passed for the purposes of the war, enabling the General Medical Council to register for the period of the emergency Canadian and United States physicians. They will thus be able to join the Emergency Medical Service with the same privileges as British physicians. Previously we have never had medical reciprocity with the United States."

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### TRANSPLANTED HUMAN BUDS IN THIS WAR

The effect on their health of the transplantation of 750,000 children removed from London to escape Nazi bombs is studied in a new book called *Borrowed Children* by Mrs St Loe Strachey. While some of them suffered from fears, anxieties, and homesickness, to many of them, says a reviewer, "this transplantation to a new and often better environment resulted in great benefits. Better and more ample food provided at regular meals, regular hours for rising, and more healthful hours for retiring were among these. Country experiences, where for the first time these children had intimate contact with plants and animals, had great value."

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### STOMATOLOGIC NOTE FROM PUERTO RICO

Mayaguez, Puerto Rico. Robert Gumbs was appointed vice-consul on February 12, 1880, and Alfred A. Saliva was appointed consular agent on February 1, 1892.

# Medical News

## Nonprofit Medical Expense Insurance

THE Medical Society of the County of Westchester at its meeting on January 21, 1941, took definite action to express its opinion of the merits of the six corporations established under Section IX-C of the Insurance Law for operation in New York City and surrounding counties. A committee analyzed these corporations and made the following report, which was adopted unanimously.

For several years the medical profession in New York State, and particularly the Medical Society of the County of Westchester, has favored the principle of medical expense insurance to enable the public voluntarily to budget against the costs of expensive or prolonged illnesses.

Both the County and State societies favored the adoption of legislation to permit this development.

The Committee on Medical Economics has examined, on behalf of the Society, the plans of six organizations established under Section IX-C of the Insurance Law, as follows:

- A—Medical Expense Fund of New York Inc
- B—Group Health Cooperative, Inc
- C—American Plan for Medical and Surgical Care, Inc
- D—Medical Guild Foundation, Inc
- E—Association for Prepaid Medical Care, Inc
- F—Associated Health Foundation, Inc

Three of these plans provide for payment of the physicians' fees on a fee for service basis, the remaining three plans providing for payment of a single annual capitation fee per subscriber.

The mechanism by which the medical care is to be provided is essentially the same for all of these plans, insofar as the patient is concerned.

Plans identified above as C, D, E, and F, are all characterized by the following objectionable features:

1. There are in general no income limits or extremely high income limits for eligibility of the subscriber.

2. An unlimited amount of service may be required of the physician in any contract year.

3. A lengthy period of notice is required of the physician to terminate his contract.

4. There is no stated minimum compensation guaranteed to the physician, even for service to patients in the highest income brackets.

5. The physician is permitted to make no private charges to supplement the unspecified remuneration to be received from the corporation.

6. Three of these plans require no deductible charges to be paid by the subscriber as a safeguard against unwarranted demands for service, and in the fourth plan the deductible charges are not required of group enrollees.

*Your Committee recommends* that the plans of the American Plan for Medical and Surgical Care, Inc., the Medical Guild Foundation, Inc., the Association for Prepaid Medical Care, Inc., and the Associated Health Foundation, Inc., be disapproved by the Society.

There remains one organization offering medical expense insurance on a fee for service basis, namely, the Medical Expense Fund, Inc., and one organization, the Group Health Cooperative, Inc., offering unlimited medical care on a per capita, yearly fee basis.

The Group Health Cooperative proposes to offer the patient an unlimited amount of general care, including an annual health examination and such preventive services as the individual may elect to obtain, for an annual per capita fee of \$6.60 for each adult enrolled. Added capitation fees are provided for children. Specialists are to be paid on a fee for service basis, calculated according to units of service rendered. The actual remuneration for specialists is estimated to approximate two-thirds of the Workmen's Compensation Schedule of Fees. The general physician may make an additional charge to the patient in the amount of \$1.00 for the first call in any home illness. The income limits for eligibility under the Group Health Cooperative plan are \$2,000 for an individual, \$3,000 for a couple and \$300 additional for each additional dependent.

Although Group Health Cooperative emphasizes to the lay public the advantages of unlimited preventive care and a periodic health examination included in its plan, nevertheless, the remuneration provided the physician is evidently calculated on estimated needs for curative medical service, no financial provision being made to pay for preventive services. A thorough physical examination alone should be worth more than the annual capitation fee. To add to this the possible demand for accepted preventive services, such as the use of cold vaccine, poison ivy, and other antigens preventively, etc., would render the capitation fee even more inadequate when contrasted with a fee for service plan.

Without questioning the value of these elective procedures in themselves, the Committee does not approve of the inclusion of such procedures in an insurance program until proved to be actuarially sound. Certainly such procedures should not be included unless provision is made for adequate remuneration for them.

The Committee's study leads it to question the adequacy of the capitation fee as applied to Westchester County, in the face of possible contingent demands for medical services. It is axiomatic that inadequate financial returns in the long run inevitably produce inferior service. The Committee finds further that the provisions for the control of abuse by subscribers are indefinite, and, in the opinion of the Committee, totally inadequate.

The Committee is opposed to the principle of capitation fees. We find no social need or justi-

fication for this basis of remuneration. We find no assurance that it will attract the willing participation of any considerable number of physicians, and there is every indication that it will lower the standards of remuneration as against those now obtaining in the income group which can be expected to purchase this insurance.

Our objections to the plan of Group Health Cooperative are recognized to be largely theoretic. Apart from its underlying philosophy and its principal features, with which we do not agree, it may be said that this plan has been carefully thought out.

The Committee recommends that approval of the plan of Group Health Cooperative be withheld.

The Committee has made a very careful examination of the plan of Medical Expense Fund, Inc. The main assumption of this plan is that the primary need for the application of the insurance principle is to protect the individual against the cost of serious or prolonged illness. We are in agreement with this philosophy. The Medical Expense Fund, Inc., has met the principles set forth by the Medical

Society of the State of New York to govern medical expense insurance. It is so organized that the medical societies of the Metropolitan area effectively control its policies through their duly elected delegates who are the voting members of the corporation. The assumptions upon which the Medical Expense Fund expects to operate are also theoretic in part, but they seem to us to be the soundest, most reasonable, and fairest, both to the patient and to the physician, of all the plans examined.

There are, of course, questionable, even objectionable features to this plan, but they largely relate to details which may be corrected if and when experience indicates changes in the plan are needed. There is, of course, no proof or even any convincing precedent that this plan will succeed, but of all the plans considered it is the one that most closely follows the established pattern of medical practice and accepted principles of insurance. It is also as clearly and completely thought out as any other plan.

We recommend that the Society approve the purposes and plan of organization of the Medical Expense Fund, Inc.

## County News

### Bronx County

On December 7, 1940, the Bronx Medical Association tendered its charter member, Dr Nathan B. Van Etten, president of the American Medical Association, a testimonial dinner at the Bronx Schnorer Club to celebrate his fiftieth year in the practice of his profession. There was an attendance of over 150. The Association availed itself of the opportunity to present Dr Van Etten with a watch on which was inscribed "To Dr Nathan B. Van Etten, President of the American Medical Association, 1940, for fifty years zealous exponent of medical ideals and ethics, with high regard from the Bronx Medical Association"—Reported by Carl Wurm, Jr., M.D., Secretary.

### Broome County

Dr Arthur S. Chittenden, of Philadelphia, one of Binghamton's leading physicians and surgeons until his retirement in 1934, spoke at a meeting of Binghamton Academy of Medicine on January 21 in City Hospital Auditorium.

His topic was "Our Town and Its Doctors—Past, Present, and Future."

Dr Lester H. Quackenbush, of Binghamton, who died on January 14, at the age of 79, was a past-president of the county society and of the Binghamton Academy of Medicine. He had practiced medicine for fifty years.

### Clinton County

The new officers of the county society are as follows: president, Dr Eric D. Pearson, Plattsburg; vice-president, Dr Dana A. Weeks, Peru; secretary, Dr James J. Reardon, Plattsburg; treasurer, Dr Kenneth M. Clough, Plattsburg; censors, Drs Sidney Mitchell, Elmer Wessell, and Ira A. Rowison, all of Plattsburg.

### Columbia County

At the annual meeting of the county society these officers were chosen for 1941: president,

Dr Rosslyn P. Harris, Hudson, vice-president, Dr Ralph F. Spencer, Hudson, secretary-treasurer, Dr Henry C. Galster, Hudson, censors, Dr Clark G. Rossman, Hudson, Dr Sherwood V. Whitbeck, Hudson, Dr Frank C. Maxon, Chatham, Dr Rosewell D. Shaw, Stottville, and Dr Leonard D. Carpenter, German-ton.

### Erle County

Federal agencies were blamed for "misunderstandings between the public and the medical profession" by Dr Nelson W. Strohm on January 20 in Hotel Statler in his inaugural address as president of the county society. To help correct this, doctors must become more interested in politics, he asserted.

"Nationally," he said, "the profession was at one time called a monopoly and court action instituted against it, but when the same federal agencies want something of it for nothing—such as the preparedness program, Selective Service boards, advisory boards, etc.—they refer to it as a profession, so that it is no wonder that the laity wonders just what it is."

"It is well known," he warned, "that you cannot give the state power to do something for you without giving it the power to do something to you."

"The family physician or general practitioner must be revitalized and urged into active leadership of all political movements concerned with the physical, moral, and mental welfare of every citizen."

Commenting on the society's proposed medical welfare plan for Erie County, in which the indigent patient would be given the privilege of choosing his own hospital and physician, Dr Strohm cautioned the members to be wary of plans "proposed by lay groups."

"The one thing we must continue to insist on," he said, "in this or any other plan is that the patient's health and welfare come first and that he must remain the employer of his physician."

A course of lectures in vitaminology, continuing fifteen weeks on Wednesday evenings, is being given at Meyer Memorial Hospital in Buffalo by Dr Julia E Lockwood, instructor in physiology at the medical school of the University of Buffalo

Dr John G Meidenbauer, of Buffalo, who died on January 24 at the age of 82, had practiced medicine for over fifty years

#### Fulton County

Members of the county society voted to sponsor a course of lectures on traumatic surgery at the meeting held at the Hotel Johnstown on January 16

All physicians in the county, whether members or not, are invited to attend these lectures which will be held periodically throughout the year

The group heard Dr George Lenz tell of his experiences in forty years of surgery in Fulton County

Following the meeting, which was presided over by Dr B A Winne, a turkey dinner was served There were 30 members present

#### Greene County

The regular quarterly meeting of the county society was held on January 14 at Memorial Hospital, Catskill Dr Herbert Weinauer, the new president, presided and the speaker was Dr Harry V Judge, of Albany

#### Herkimer County

Members of an official advisory health preparedness committee for Herkimer County, to cooperate with the county defense council and state health commission, are announced by Assemblyman Mailer, health commission chairman

They are county executive or representative, Dr L P Jones, Ilion, district state health officer in charge of area, Dr Samuel Hyman, Utica, county health officer, Dr L L Kelley, Middleville, chairman of medical preparedness committee of county medical society, Dr Fred C Sabin, Little Falls

County public welfare commissioner William Dize, Middleville, representative of county hospital, George J Sluyter, Herkimer, representative of state dental society, Dr Howard James, Mohawk, representative of Red Cross, Dr Duane B Madison, Herkimer, representative of state nurses association, Miss Jane Boote, Herkimer, representative of state pharmaceutical society, Edward Sodolski, Herkimer, Dr A B Santry, Little Falls health officer, and William Van Allen, Little Falls welfare commissioner

#### Kings County

The scientific program of the meeting of the county society on January 21 featured these topics and speakers (a) Inaugural Address "The Doctor Looks Ahead," Dr Maurice J Dattelbaum, (b) Address "The Civilian Surgeon in War," Brigadier General Raymond F Metcalfe, commanding general, Army Medical Center, Washington, D C, (c) Address "Medical Service in Our Navy During Times of Expansion," Commander Guy B MacArthur, M C, U S Naval Hospital, Brooklyn, N Y

The Brooklyn Urological Society held a

meeting on February 11 The scientific program was as follows "A Case of Lymphosarcoma of the Kidney Simulating Carbuncle," by Dr Bernard Davidson, "Experiences with the Treatment of Incontinence in Women," by Dr Ray McCune Bowles (by invitation), "Experiences with the Treatment of Carcinoma of the Bladder," by Dr Ray McCune Bowles (by invitation) The discussion was opened by Drs Nathaniel P Rathbun, Charles S Cochrane, and Paul W Aschner

The Ocean Medical Society met on January 20 at Aperion Manor and heard an address on "Cancer of the Colon," by Dr John E Jennings

The Williamsburg Medical Society listened to a paper on "Vitamins Uses and Abuses," by Dr Heinemann, of Yale University, at the meeting on February 10 at the Leon Louis Auditorium

The annual meeting and election of officers of the Pan American Medical Association, Brooklyn and Long Island Chapter, was held at the Montauk Club on December 6, 1940 The following officers were elected president, Dr Edwin A Griffin, vice-presidents, Drs Thomas B Wood, F Raymond Surber, Siegfried Block, secretary, Dr Frank E Mallon, and treasurer, Dr Morris W Henry

The next scientific meeting will be held on February 25 at 9 00 P M. in the Nurses' Lecture Hall of the St John's Hospital of Brooklyn, 480 Herkimer Street, near Albany Avenue. An interesting program has been arranged (1) "Sudden Death," Dr Theodore J Culphey, pathologist, Meadowbrook Hospital, and coroner in Nassau County, (2) "Arterial Hypertension," Dr Henry A Schroeder of the Rockefeller Institute, (3) "The Management of Embolism and Thrombosis, the Use of Heparin," Dr Merrill N Foote The medical profession is cordially invited

Dr Edward L Bauer of Jefferson Medical College, Philadelphia, was the principal speaker at the annual installation of officers of the South Brooklyn Medical Society in the Baltic Street Health Center, on January 9 Dr Bauer discussed "Prevention and Treatment of Vitamin Deficiency Diseases in Children"

The Homeopathic Medical Society of Kings County held a scientific session in the lecture room of Prospect Heights Hospital, Washington Avenue and St John's Place, on January 9

Dr Thomas B Wood of Coney Island Hospital spoke on "The Acute Ear," and the discussion was led by Dr A Roth. Dr Howard T Blair is president of the society

#### Livingston County

Dr P M Ostrander has announced his retirement from the practice of medicine after serving the people of Nunda and Portage townships for fifty-seven years

#### Madison County

The winter meeting of the county society was held at the Hotel Oneida, Oneida, on January 23 The program was as follows (1) "Active and Passive Immunizations in Children," by Dr Brewster C Doust, Syracuse Discussion was opened by Dr Ernest Freshman, Oneida.

(2) "Cavernous Sinus Thrombosis and Heparin Treatment," by Dr. Irl H. Blaisdell, Syracuse Discussion was opened by Dr. Gordon D. Hoople, Syracuse. This talk was illustrated by lantern slides. (3) "Low Back Pain from Protruding Intervertebral Disks," by Dr. Arthur D. Ecker, Syracuse. Discussion was opened by Dr. Howard Beach, Oneida. Motion pictures were shown.

A course of lectures on traumatic surgery, arranged by the Madison County Medical Society by Dr. Henry H. Ritter, New York City, was given at the Hotel Oneida, Oneida, New York, on Wednesdays at 8:30 p.m. On January 29, Dr. Willis W. Lasher lectured on "Bursitis, Sprains, and Strains", on February 5, Dr. H. M. Bergamini was heard on "Abdominal Injuries", and on February 12, Dr. David Goldblatt, on "The Treatment of Burns and Hand Infections". All three doctors are from New York City.

In addition to the above course, the following miscellaneous lectures will be presented in co-operation with the State Department of Health on February 19, "Merits of Surgery, X-ray, and Radium as Applied to Cancer," by Dr. Louis C. Kress, director, Division of Cancer Control, State Health Department, on February 26, "Postabortal and Postpuerperal Infections," by Dr. Ferdinand J. Schoenbeck, of Syracuse, on March 5, "Cancer of the Gastrointestinal Tract," by Dr. J. P. O'Brien, of Buffalo, and on March 12, "Rheumatic Fever," by Dr. Homer F. Swift, Hospital of the Rockefeller Institute for Medical Research, New York City.

#### Monroe County

Draft registrants rejected for remediable defects will be enabled to correct their physical disability through efforts announced by the County Tuberculosis and Health Association.

Men rejected for teeth defects will be referred to the Rochester Dental Society. Seventeen eye physicians have agreed to examine the eyes of men turned down for visual defects, particularly those with conditions that can be corrected with glasses, according to Dr. Lyman C. Boynton, medical consultant of the Tuberculosis and Health Association. The association will sponsor a project to raise funds to buy glasses, he said.

Corrective services of the association have previously functioned effectively to aid trainees in shop schools for war industries, Dr. Boynton pointed out, and these services will be made available to men rejected by draft examiners.

At a county society meeting he reported that out of 1,700 Monroe County men examined for the draft more than 400 had been rejected. Of the 400, 90 had correctable defects, 80 per cent of the 90 were turned down because of their teeth, 15 per cent for eye trouble, and 5 per cent for other reasons.

Through its Medical Defense Committee, the county society will aid in removing the draft "bottle-neck" of physical examinations by assigning 110 additional physicians to help in mass examinations for nine of the county's nineteen draft boards.

Results of a year's study of pneumonia as observed in seven Rochester hospitals were discussed on January 21 at a special pneumonia institute.

Taking part in the institute in the Academy of Medicine were leading state figures in the fight on pneumonia, as well as physicians of Monroe, Livingston, Wayne, and Ontario counties.

The study, covering the period from November, 1939, to November, 1940, and including an analysis of 758 cases of clinical pneumonia, is one of the most intensive ever undertaken in the nation, according to Dr. David B. Jewett, chairman of the pneumonia control committee of the county society.

The study was discussed by Dr. Maxwell Finland, assistant professor of medicine at Harvard, assistant physician of Thorndike Memorial Laboratory in Boston City Hospital, and member of the technical advisory committee on pneumonia control for New York State, and by Dr. Edward J. Rogers, of Albany, director of the State Bureau of Pneumonia Control.

The general discussion was led by Dr. O. W. H. Mitchell, of Syracuse, chairman of the State Society's committee on public health and medical education. Dr. C. Stewart Nash, president of the county society, presided.

The institute was under auspices of the State Society, county society, and the State Bureau of Pneumonia Control.

#### Nassau County

According to a recent Lions Club talk by Dr. J. Louis Neff, secretary of the county society, the health of Nassau County is superior to any other county in the nation. Regarding the health of draftees, the speaker asserted that there were fewer medical rejections in Nassau County than in any other county in the country.

#### New York County

The program of the county society at the meeting on January 27 was as follows: (1) address of the retiring president, (2) address of the incoming president, (3) "Conditions Frequently Mistaken for Hyperthyroidism. Analysis of 1,500 Cases Diagnosed as Thyroid Disorders," by Dr. Alfred H. Noehren, Buffalo, by invitation.

The annual meeting of the New York Heart Association, followed by a scientific session, was held at The New York Academy of Medicine on January 23.

Dr. Ernst P. Boas, chairman of the Association, gave a report on the year's activities. Other speakers were Dr. John G. Gibson, II, of Peter Bent Brigham Hospital, Boston, and Dr. C. Sidney Burwell, of Harvard University Medical School. Dr. Gibson spoke on "Some Observations on the Blood Volume in Heart Disease," and Dr. Burwell's topic was "Studies of the Circulation During Pregnancy." Drs. Charles Warren and Harold J. Stewart led the discussion.

Dr. Colin Luke Begg, specialist in genitourinary diseases who had practiced in New York since 1901 and was one of the founders of the American Urological Association, died on January 15 of a heart attack in a taxicab shortly after leaving The New York Academy of Medicine. His age was 67.

Dr. Francis Carter Wood will speak at The

New York Academy of Medicine on February 27 on "What We Do Know about Cancer," in the series of "Lectures to the Laity"

### Oneida County

Dr J B Lawler was elected president of the county society to succeed Dr F John Rossi at the annual meeting on January 14 Dr Rossi spoke on "The Irregularities of the Practice of Medicine" Other officers named were vice-president, Dr Robert Sloan, secretary, Dr James I Farrell, treasurer, Dr H D MacFarland, librarian, Dr T Wood Clarke, board of censors Dr William Hale, chairman, Dr B F Golley, Rome, and Drs Rossi, A F Gaffney, and F M Miller, Sr

Dr Dan Mellen, Rome, and Dr J F Kelley were elected to the House of Delegates of the State Society With Dr Sloan, who was elected last year for two years, and Dr Hale, vice-speaker of the House, the society now has four votes in that body

Dr Philip L Turner was elected president of the Utica Academy of Medicine at the annual meeting on January 16

Other officers chosen were vice-president, Dr Fred G Jones, secretary, Dr A R Hatfield, Jr, treasurer, Dr H D Parkhurst, trustees, Dr William W Wright, retiring president, Dr Harry D Vickers, and Dr Robert C Hall

Dr William Crawford White, clinical professor of surgery of Columbia University and surgeon at Roosevelt Hospital, New York City, discussed "The Surgical Diseases of the Large Bowel" He stressed the use of radium

### Onondaga County

No information on results of physical examination of men under the Selective Service System may be given out by local boards, it is noted in a letter concerning the county society's proposed study of cases of rejection

The society sought the names and addresses and causes of rejection of registrants with a view to determining the extent of a social welfare program needed to remedy the causes of rejection

Eye and teeth deficiencies have caused the bulk of physical disqualification at the induction station, but no information has been available as to the chief grounds for disqualification of men by local board medical examiners

### Ontario County

The Canandaigua Medical Society, at its annual meeting held with Dr A W Armstrong, West Lake Road, elected these officers president, Dr Hubbard K Meyers, vice-president, Dr James F Maltman, and secretary and treasurer, Dr C J Bobeck Dr F C McClellan and Dr John H Pratt were elected directors for two years, and Dr M R Blakeslee, of Shortsville, and Dr L A Stetson, were elected directors for three years, with Dr McClellan as chairman

### Orange County

Members of the Newburgh Bay Medical Society elected Dr A W Beck, of Monroe, as president on January 14 to fill a vacancy caused by death of Dr Leo C DuBois, of Newburgh, on January 8 The annual meeting of the society was held in the Palatine Hotel

After the election, Lawrence Gould, radio commentator, spoke on "Keeping the War Out of America."

Other officers named included Dr Earl R VanAmburg, vice-president, Dr Theodore Proper, of Newburgh, treasurer, Dr C W Layne, of Newburgh, secretary, Dr Charles E Townsend, of Newburgh, auditor, and Dr H L Stephens, of Walden, Dr C G Lee, of Highland Falls, Dr P E Banks, of Newburgh, and Dr Paul Traub, of Washingtonville, trustees

### Queens County

The county society at its meeting on January 28 listened to an address on "The Present Status of Radiation Therapy in the Treatment of Malignant Disease" by Dr William J Hoffman, assistant surgeon, Skin and Cancer Unit, Post Graduate Hospital, associate surgeon, Queens General Hospital, consultant, Neoplastic Diseases, St John's Hospital. The discussors were Drs Alfred Angrist, Morris S Bender, Edward A Flemming, Leonard Goldman, Irving Pontemon, Francis G Riley, and Joseph S Thomas.

The Friday Afternoon Talks are as follows February 7 at 4 30 P M—"Chronic Heart Disease—Diagnosis and Treatment," by Dr Clarence de la Chapelle, chief, Cardio Clinic, Lenox Hill Hospital, physician, Bellevue February 21, at 4 30 P M—"Recent Advances in Diagnostic Radiology," by Dr Bernard S Epstein, assistant radiologist, Jewish Hospital.

The Rockaway Medical Society held its eighteenth annual beefsteak on January 30 in the Daniel M O'Connell Post, No 272, American Legion Clubhouse, 92nd Street, Rockaway Beach. Dr Louis A Sarrow was general chairman.

A professional entertainment was given and Dr Joseph Baum served as toastmaster

### Rensselaer County

Captain George A Ketler, Medical Corps, United States Army, examining physician at the Albany induction center, was a speaker at the meeting of the county society at the Troy Health Center on January 14.

Captain Ketler clarified several items of the examination of draftees and outlined the fundamental factors in regard to the physical standards required for military service

During the business meeting, the society voted to conduct its meetings at The Hendrick Hudson in the future The society felt that better facilities and atmosphere for the meetings were available at the hotel and that larger attendance would result

Dr Charles W Hamm, retiring president, submitted his annual report and gave an interesting résumé of the history of the county society from its inception to date Reports on the activities of the last year were also received from the heads of the various committees

Dr John Sibbald, new president of the society, presided for the first time

### Suffolk County

The new officers of the county society are president, Dr George Bergmann, Mattituck, first vice-president, Dr David Corcoran, Central Islip, second vice-president, Dr Archie M

Baker, Lindenhurst, secretary, Dr Edwin P Kolb, Holtsville, assistant secretary, Dr Willetts W Gardner, Patchogue, treasurer, Dr Grover A Sillman, Sayville, censors Drs Paul F Nugent, Leon J Barber, Louis F Garben, George Thompson, and Cyril E Drysdale

#### Warren County

Following are the officers of the county society for 1941: president, Dr Edward J Fitzgerald, Glens Falls, vice-president, Dr James A. Glenn, North Creek, secretary-treasurer, Dr Roger S Mitchell, Glens Falls, censors Dr Hilton H Dier, Lake George, Dr James B Shields, Glens Falls, and Dr Herbert A Bartholomew

#### Washington County

Dr L Whittington Gorham, professor and director of the department of medicine, Albany Medical College, and physician-in-chief, Albany Hospital, addressed the county society on January 16 at its meeting in the Mary McClellan Hospital, Cambridge

#### Wayne County

The first in a series of six lectures on medical topics to be held every two weeks was given on Tuesday, February 4, at a dinner-meeting at the Hotel Wayne in Newark.

The lectures are sponsored alternately by the Wayne County Medical Society and the Newark

Doctors' Club. Dr Frederick Wetherell, Syracuse, read a paper on "Gout and Its Management" at the first meeting followed by a discussion by Dr C W Webb and staff

#### Westchester County

Dr Harry Klapper was elected president of the White Plains Medical Society at a meeting held at the Gedney County Club on January 14

Dr Klapper succeeds Dr G V H Hunter. The vice-presidency went to Dr J R. Montgomery, incumbent, and Dr Harold Nottley was named secretary to replace Dr Klapper. Named to the board of governors for two years were Dr Hunter and Dr James F D'Wolf, both succeeding Dr D C McElligott and Dr R B Hammond.

Following the meeting and election Dr D E Copple, of Pleasantville, presented a travelogue picture of England and Wales, in color, as they appeared before the war

#### Wyoming County

The officers of the county society for 1941 are as follows: president, Dr Clifford H Harville, Warsaw, vice-president, Dr Paul A. Burgeson, Warsaw, secretary-treasurer, Dr Oliver T Ghent, Warsaw, delegate to state convention, Dr Henry S Martin, Warsaw, censors Drs L Hayden Humphrey, Silver Springs, Mary T Greene, Castile, and George A. McQuilkin, Varysburg

### Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
Colin L Begg	67	Toronto	January 15	Manhattan
Harry L Cruttenden	64	N Y Univ	January 19	Cooperstown
A. Edward Davis	74	Louisville	January 17	Manhattan
Frederick A. Eggersman	83	N Y Eclectic	January 23	Richmond
James W Enright	67	Syracuse	January 16	Rochester
Samuel Forster	59	P & S N Y	January 10	Manhattan
Jacob Heller	49	Buffalo	January 19	Buffalo
Charles L Janssen	54	Brussels	January 22	Manhattan
William L Kantor	74	P & S N Y	January 17	Bronx
Samuel M Landsman	74	P & S N Y	January 10	Manhattan
Jennie E Mabae	43	Cornell	November 7	West Nyack
J A Maryson	74	N Y Univ	January 18	Bronx
John G Meidenbauer	82	Buffalo	January 24	Buffalo
Thomas T Mooney	66	Queens Canada	January 14	Rochester
Phil H Neal	44	Med Col Virginia	January 22	Manhattan
Lester H Quackenbush	79	N Y Univ	January 14	Binghamton
Joseph J Rosenberg	59	Univ & Bell.	November 6	Manhattan
Charles L Weiher	81	Bellevue	November 18	Poughkeepsie
Peter Yudkowsky	49	L I C Hosp	January 24	Manhattan

### CORRECT DIAGNOSIS

A man enters the doctor's office. "Doc, I want a thorough examination." "All right," says the doctor. "First let me ask you a few questions. Do you drink much alcoholic liquor?" "Have never touched the stuff," Doc," answers the patient.

"Ever smoke?" "Never started the filthy habit," he answers. "Do you run around nights?" "No," answers the patient. "I'm always in bed by ten o'clock."

"Let me ask you one more question," says the doctor. "Do you ever have sharp pains in your head?"

"Yes, I do," said the examinee, "that's what I have been worried about. I often get pains in the top of my head and sometimes a sort of a kink."

"There's your whole trouble," said the doctor. "Your halo is on too tight."

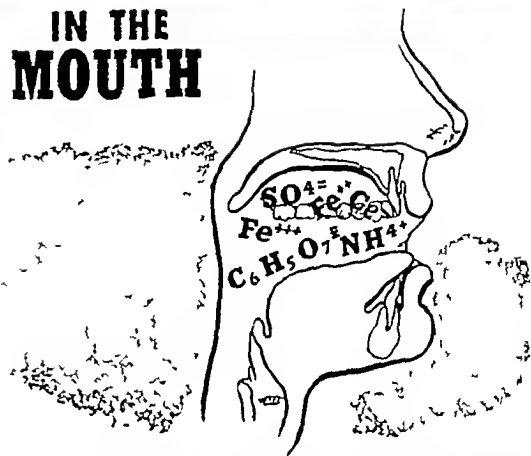
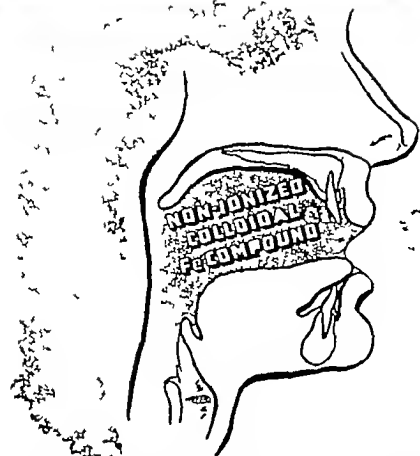
—*Milwaukee Medical Times*

# COLLOIDAL IRON

## VS

# IONIZABLE IRON

### IN THE MOUTH



WHILE orally administered iron is absorbed from the intestine, the entire alimentary tract is by anatomical necessity subjected to its influence. Thus the problems of irritation, of staining, of dehydration, and other unpleasant side reactions have become the bugbear of hematonic therapy. There are, however, significant differences between the iron salts and colloidal iron, which are of major importance in this connection. The iron salts (sulphates, citrates, etc.) ionize more or less readily with the liberation of acidic ions. And it is to this chemical fact that many of the unpleasant side reactions of iron administration are attributable. In the mouth, for example, the iron salts may dissolve tooth enamel

may stain, are unpalatable and unpleasant. But these things are not true of OVOFERRIN, for OVOFERRIN is colloidal iron in its most minute, most efficient subdivision. It is not in ionizable form. It cannot stain or dissolve tooth enamel any more than an iron nail can. It is tasteless, odorless, and pleasant to take, thus assuring patient cooperation. Yet OVOFERRIN is highly assimilable since it is in the colloidal state, the form in which most foods are physiologically absorbed. As it is fully hydrated, it cannot cause dehydration and constipation. In over 39 years of widespread use it has earned the title of 'the rapid blood builder'. Prescribed in 11 ounce bottles; one tablespoonful at meals and bedtime in milk or water.



## **OVOFERRIN** COLLOIDAL IRON BLOOD BUILDER

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the "Pale Child" and Run Down States

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# Medicolegal

LORENZ J. BROSNAN, ESQ.

Counsel, Medical Society of the State of New York

## Responsibility of Physician for Acts of Nurse

VERY recently in a nearly jurisdiction a decision was handed down by an appellate court involving the liability that may be imposed upon a physician by a nurse not in his actual employ.

The plaintiff in the case sued a Doctor A for damages for personal injuries alleged to have been sustained by her as a result of medical treatment by the defendant.

Upon the trial the proof established that prior to July 1, 1936, Doctor A had been practicing his profession as an employee of Doctors B and C, who were partners, and that on that date Doctor B left the partnership and Doctor A entered the partnership with Doctor C in place of Doctor B. The action was brought by the plaintiff against Doctor A individually, and not against either of the two partnerships.

Plaintiff, upon the trial, established that prior to June 29, 1936, she had been treated as a patient for sinus infection and had received certain injection treatments at the office of the partners B and C. The facts upon which she relied in the case transpired on a single date, but she was entirely uncertain as to whether that date was June 29 or July 2.

Her testimony was that on the said day she called at the office and found Doctor A in charge and no other physician present. She asked him for further medical care, and he referred her to a nurse in the office with instructions that an injection of omnadin be given. That nurse, so far as appeared, was qualified. She, however, turned the patient over to "a girl in blue," who seems to have been an office attache ordinarily charged with minor nonmedical duties. Plaintiff testified that the latter girl administered an injection that caused the injuries complained of. According to her, a rather dirty appearing tray or pan was produced containing a bottle in which was a hypodermic needle. On former occasions injections had been made of substances withdrawn by a sterilized needle from a sealed ampule. There was no sealed ampule in use on the date in question. As the injection was made the plaintiff evidenced some unusual pain and "the girl in blue" placed her hand over the spot where the needle was inserted. An infection causing some disability and suffering followed the incident.

Upon such proof the plaintiff recovered a verdict at the trial against Doctor A. He appealed, however, and upon that appeal the Court of Appeals reversed the judgment and entered judgment in favor of the defendant doctor.

The first point that was taken into consideration was that of the status of Doctor A, that is, whether he was an employee of B and C, partners, or whether he was a partner of C. The Court of Appeals ruled that since the burden

was upon plaintiff to establish facts imposing liability upon Doctor A, her evidence had to be considered as establishing that the date of the treatment was June 29, a date when Doctor A and "the girl in blue" were fellow employees of the partners B and C.

The Court of Appeals ruled that under such circumstances no cause of action against Doctor A had been shown and said in part:

"As Doctor A was still an employee of Doctor B (and Doctor C), and the nurse and 'the girl in blue' were also employees of Doctor B (and Doctor C), the effect of this action is to attempt to charge one employee with the negligence—if any existed—of a fellow employee. No rule of law has ever imposed liability under such circumstances.

"It is claimed that a physician, though merely an employee, has some unassignable obligation which imposes upon him liability for the acts of his fellow employees in a physician's office.

"No controlling authority is cited in support of this claimed exception to the general rule.

"It is asserted that the plaintiff is helpless in the presence of such a situation. Such is not the case, for the employer is responsible for the negligence of any of his employees. That the plaintiff has mistaken the responsible defendant—if negligence and proximate cause were proved—is beside the point. It is clear that the plaintiff having failed to prove any direct liability on the part of the defendant for the acts of which she makes complaint, the judgment of the Court of Common Pleas should be reversed and judgment here entered for the defendant."

## Inquiries

YOUR Counsel recently received the following inquiry:

"Dear Mr. Brosnan:

"As Counsel for the State Medical Society, would you be willing to give me an opinion on the following point:

"Patient A is injured in an automobile accident, following which he has an x-ray examination at the request of his attending physician. Patient A then sues the man whose car struck him.

"Sometime later the court action is instituted and the patient is examined by another physician who is paid by the defendant in the action.

"When patient submits to the examination by the second physician, by such action is there an implied understanding that the physician representing the defendant has a right to see any and all x-rays taken with reference to the accident?

Sincerely yours,"

[Continued on page 405]

\* Rath vs. Craddock, 29 N.E. (2nd) 426

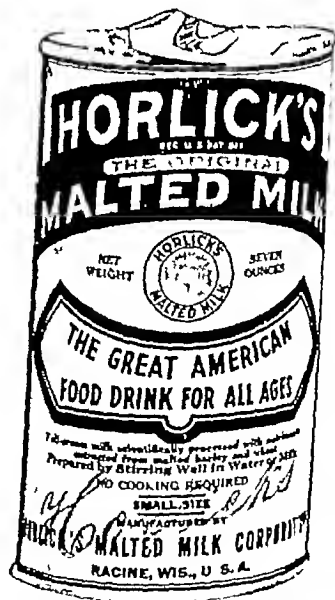
# Simply to remind you why Horlick's Malted Milk enjoys physicians' confidence

**F**ADS come and go. Doctors are besieged with "samples" and "literature." Yet an amazing preponderance of the medical profession goes calmly along, relying on Horlick's Malted Milk.

Here are two fundamental reasons —

- 1.** By long clinical use, Horlick's has proved its value in feeding infants, growing children, ill, convalescent and well adults, the aged.
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RACINE, WISCONSIN

[Continued from page 403]

Your Counsel's reply was as follows

"Dear Doctor

"In your letter you inquire as to whether, when a physical examination is arranged for the benefit of the defendant in a personal injury action, there is an implied understanding that the examining physician is entitled to see any and all x-rays taken with reference to the accident

"Unless the plaintiff's attorney consents the examining physician for the defendant cannot compel the production of prior x-rays

"In a proper case the defendant may procure an order from the court requiring that a plaintiff in a personal injury action submit to x-ray examination in order that his true physical condition at the time of the examination may be ascertained

Very sincerely yours,"

Your Counsel recently received the following inquiry

"Dear Sir

"Yesterday I was called to see A, 11 years old, who is boarding with people in C. I found that he had appendicitis and decided that an immediate appendectomy was necessary

"A's mother and father are separated and the mother has custody of the children. It was very difficult to reach the mother to get her consent to operation, and five hours passed before she was found. If she had not been located would we have made ourselves liable to a malpractice suit by operating without consent?

"The operation was successful and we look for a speedy recovery. However, accidents do happen sometimes, and I would like to know just how much liability we would incur by operating on a minor without the guardian's consent.

"Dr. W is physician to X Military Academy and some of the pupils are from Panama and South America. It is possible that one of them might be stricken with an ailment requiring surgical operation. What would be his standing if he were unable to locate the guardian to obtain consent?

Yours truly,"

Your Counsel's reply was as follows

"Dear Doctor

"I acknowledge receipt of your letter in which you make certain inquiries concerning the necessity of a consent to operate in various cases involving infants

"The principal case cited by you in your letter was one in which an eleven-year-old child, one A required an immediate appendectomy. I believe that you would not have made yourselves liable to a suit for damages if you had proceeded with the operation without actually obtaining the consent, since you did, in fact, make a reasonable effort to obtain the consent of a parent of the child and since the case was one in which an actual emergency existed requiring the operation in an endeavor to save the patient's life

"In general, it may be stated that where no actual emergency exists requiring immediate operation to protect the life of an infant patient, no operation may be performed without the consent of at least one of the parents or the legal guardian of the child.

"I understand that in X Military Academy some of the pupils are from Panama and South America and that Doctor W seeks suggestions as to procedure when one of the pupils of said Academy might be stricken with an ailment requiring surgical operation. In every case where no emergency exists, I believe that no operation should be undertaken without first obtaining consent by cablegram from the parents. Where an emergency exists I feel that wherever possible the parents should be cabled and their consent requested in order that a reasonable attempt be made before operation to obtain actual consent of the parents. However, in an extreme emergency where it appears that consent by cable could not be obtained in time for the operation, I would suggest that the best procedure would be for the doctor in charge of the case to notify the principal or headmaster of the school of the circumstances and obtain his consent to operate as the person charged in such cases with responsibility for the welfare of the pupil

Yours very truly,"

## BASKETBALL OVERTAXING ADOLESCENTS

*The Journal of School Health* returns to its criticism of our too strenuous basketball and notes that physicians, health officers, coaches, and sports writers have taken a stand against the present rules. The game is too strenuous, probably, for college players, unless the squad is large enough to permit frequent substitution, and it is certainly detrimentally strenuous for adolescent boys—high-school players

Since only the rule makers seem to favor the present rules, it devolves upon those who are truly interested in the physical welfare of boys to bring pressure upon these rule makers to compel them to adopt changes that will give more opportunity for "breather" periods, so that the circulation may have greater opportunity to

remove the waste products of vigorous exercise and thereby to lessen the strain on the heart

Not only is it a matter of common observation by those who witness games that the game is too strenuous, but reports from physicians, based on actual examinations and studies, show that the present rules result in chronic increased blood pressures and other evidences of serious harmful results

Every school physician, health officer, and school administrator should insist upon modification. Failing to get modification, the high schools themselves should adopt a set of rules of their own. There is no sensible reason why secondary school athletics should follow humbly at the heels of college athletics

# PRESENTING

## KARO SYRUP IN

## GLASS!!



1½ LBS NET

The history of Karo is inscribed in the nutrition of millions of infants. It reveals universal acceptance of Karo Syrup as an excellent source of dextrins, maltose and dextrose. Karo remains the effective milk modifier for all forms of milk and for every type of infant feeding problem.

The composition of Karo cannot be improved, so it is now introduced in superior containers—in streamlined glass bottles. Karo Syrup is processed at sterilizing temperatures and sealed hygienically in these sparkling glass containers.

The high sanitary quality of Karo can now be maintained while using the clear glass bottles in the nursery or kitchen in the preparation of infants' formulas.

The cost of 24 ounces of Karo Syrup in glass bottles is only slightly more than in cans. Karo thus yields (volume for volume) double the caloric value of powdered maltose-dextrins-dextrose at a fraction of the cost.

Karo is bacteriologically safe, devoid of laxatives or any impurities, well-tolerated by newborns, infants and children, easily digested even in difficult feeding problems, absorbed by gradations at spaced intervals in the intestinal tract, prevents flooding of the bloodstream with exogenous sugars.



## CORN PRODUCTS SALES COMPANY

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KARO IS, OF COURSE, STILL AVAILABLE IN THE FAMILIAR SANITARY TINS

Say you saw it in the NEW YORK STATE JOURNAL OF MEDICINE

# Public Health News

AT THE section meeting for school physicians, held on December 26 at the Hotel Syracuse, Dr O W H Mitchell, chairman of the Committee on Public Health and Education of the Medical Society of the State of New York, presented a paper entitled "Legislative Activities Regarding School Health Service." He mentioned the recent development of what is called medical inspection and school health service and the rapid progress which has been made. What activities should be included in such a service are not easy to determine. In keeping with the policies and principles that determine our form of government, we face the problem of doing too much as well as doing too little. Experiences in other countries should caution us to do things well—not attempt too much and avoid rapid expansion.

Criticism of the school health service has largely resulted from a lack of adequate provision preceding operation of activities. Medical schools and schools of education have failed to include in their curriculum courses that are necessary in the preparation of physicians and teachers who assume the responsibility of school health service and health education. This weakness in education is now being corrected.

Dr Mitchell also referred to the action recently taken by the Medical Society of the State of New York regarding the need for a special school health division devoted entirely to health and medical problems as a part of the State Department of Education or the State Department of Health. At the present time these activities are combined with physical education.

The physicians believe that such a reorganization would strengthen both the school health service and physical education activities. These suggestions were adopted as resolutions by the House of Delegates of the State Medical Society and have been presented to Commissioner Cole of the State Department of Education and Commissioner Godfrey of the State Department of Health.

It was called to the attention of the school physicians that the Medical Society has a special committee on School Health Service. The members are Dr E C Wood, White Plains, Westchester County, chairman, Dr Albert D Kaiser, Rochester, Monroe County, and Dr A C Silverman, Syracuse, Onondaga County. This committee will gladly meet with representatives of other groups for discussion of school health activities and policies.

Dr Michael Levitan, school health director, Rome, New York, spoke on "The School Physician's Part in National Preparedness."

"Defense from the health and life angle is as old as life itself. Health is a means of protecting the individual or group against affliction or disease and is traceable to the distant past."

"Today, with the appreciation of the effectiveness of modern methods of prevention and scientific sanitation, health measures are considered definite means of defense when our country is threatened with the spread of the war from the other side of the ocean."

"Since school health functions have for their objective the protection and preservation of the health, growth, and proper physical and mental development of our boys and girls, health service, health education, and guidance are basically significant at this time of national concern. Education in general and health education in particular are the very cornerstones and foundation of the nation and, together with proper administration, constitute the first line of national defense."

"Proper health education is a powerful and vital factor leading to the proper control of muscle and brain. As a preparedness measure we need in number and in efficiency more teachers of health education, school physicians, nurse-teachers, dentists, dental hygienists, physical training instructors, and mental hygienists."

"In the field of school health the school physician has a very important and entrusted post equal in responsibility to that of the army medical officer. While the duties of the school physician are of a different character, they are no less vital. He has the ardent task through preventive means and health education of keeping the young and growing school children under his administration physically and mentally fit to face the hardships and fight the battles of life after they leave school."

"Upon his shoulders rests the duty of aiding and assisting the school children to overcome their deficiencies of nutrition or defects of posture, tonsils, glands, teeth, and hearing. He must also aid in the problems of behavior. He must take particular pains with those children whose lot it is to have congenital or acquired abnormalities of heart or limb. In many instances such conditions may be prevented. The removal of diseased tonsils and timely care of dental caries lessen the chances of rheumatic fever in childhood and any resulting cardiac damage. Nor should it be forgotten that proper supervision and guidance of children afflicted with post-rheumatic or postpolio conditions may help restore these children to normal life."

"The advantages of health service, health education, and physical training in the schools during the past twenty to twenty-five years, through absorption of health knowledge and practice, must have had at least some effect upon the development of our boys into manhood."

"A report of the Metropolitan Life Insurance Company says in part: 'Even in advance of detailed findings on medical examinations it is safe to predict that the draftees will be found to be healthier, better developed physically and with a lower incidence of serious impairments than the draftees of 1917-18.'"

"There is no better investment for the city, state, nation, and individual taxpayer than money expended on the health of school children. The very strength of our republic depends upon the health of the school children, out of whom is built the nation's manpower in muscle and brain. Health is mainly a medical problem and it is the part of the school physicians and other health workers to make it the foundation of the nation's strength."

# Woman's Auxiliary

To the Medical Society of the State of New York

THE New York State Medical Society Convention will be held in Buffalo, April 28 to May 1, inclusive. At this time the Woman's Auxiliary holds its annual meeting at the Hotel Statler. Make your reservations now. Worth-

while medical information, pleasant social functions, and renewed friendships are in store for you. All doctors' wives are invited and information may be obtained from Mrs. Carlton E. Wertz, chairman, 95 Parker Ave., Buffalo.

## County News

First we present the newly formed group, Niagara County. On October 18, 1940, with the permission of the county medical society, forty-five doctors' wives met at the Hotel Niagara for a luncheon meeting. They chose as their leaders president, Mrs. W. R. Scott, first vice-president, Mrs. W. D. Leone, second vice-president, Mrs. F. W. Barry, recording secretary, Mrs. E. F. Dodge, corresponding secretary, Mrs. M. S. Cohen, treasurer, Mrs. J. Kingley, directors, Mesdames H. V. Cramer, G. Guillemont, and R. P. Regan. At the November assembly the Constitution and Bylaws were adopted. In December at a round-table luncheon gathering, Dr. Carl Lathrop of the Niagara County Tuberculosis Association addressed the members and showed interesting movies. On January 7 the new president of the county medical society explained the aims of a medical organization. A genuine spirit to further kindly feeling among doctors' wives has been demonstrated by the increased total to seventy-four members. *Good wishes for your continued success in this worthwhile undertaking.*

Cayuga. The annual dinner with the Cayuga County Medical Society took place recently at the Osborne Hotel. Justice Benn Kenyon related the associations of "Medicine and Law" to the delight of everyone present. A business meeting was conducted by Mrs. G. Sincerbeaur. The Red Cross asked for more help from the auxiliary. Mrs. Alfred K. Bates is chairman of a committee to investigate the advisability of the group working for the Bundles for Britain, Inc.

Columbia. The fourth annual luncheon and business meeting convened at the General Worth Hotel in Hudson, Mrs. Wm. D. Collins presided. Nine meetings were held during the past year. Outstanding speakers were Mrs. A. VanderVeer, Dr. Marion Loew of the State Department of Health, Mrs. H. E. Raney, and Mr. John Hoysradt, monologist. Newly elected officers are president, Mrs. R. L. Bowerhan, president-elect, Mrs. H. G. Henry, first vice-president, Mrs. L. J. Shonk, second vice-president, Mrs. Chas. Nichols, treasurer, Mrs. R. F. Spencer, recording secretary, Mrs. H. G. Pattison, corresponding secretary, Mrs. L. M. Miesen.

Erie. Celebrating in December their first anniversary as an auxiliary, two hundred physicians and their wives marked a memorable event with an enjoyable dinner party in the Terrace Room of the Hotel Statler. Much credit for its success is due to Mrs. Patrick Hurley, general chairman, and her able assistants. A round table luncheon preceded the business session on December 17 at which Mrs. C. E. Wertz was unanimously elected president for the second year.

Other officers are first vice-president, Mrs. P. J. Hurley, second vice-president, Mrs. S. L. Walczak, recording secretary, Mrs. H. B. Johnson, corresponding secretary, Mrs. A. E. Richter, treasurer, Mrs. J. D. Naple. Fifteen delegates were chosen to the New York State Medical Convention. After the reports there was a musical program in charge of Mrs. F. N. Potts. The efforts of the Erie County auxiliary are turned toward the convention meeting for which they are to be hostesses.

Kings. January 19 found the members of the auxiliary on their way to the National Broadcasting Company to enjoy the program "Alma Kittell's Streamline Journal." Mrs. Louis Harris, president, has announced the February meeting to introduce Mrs. Lewis Paddons who will speak on "The Motion Picture Council." In addition, Mrs. Chester A. Peake will give a book review.

Montgomery. The December meeting at the Amsterdam City Hospital had as guests Dr. S. L. Homrighouse, Dr. P. J. Fitzgibbons, Dr. Phillip B. Barton, and Dr. Leonard M. McGugan, members of the advisory council. Dr. Homrighouse, then president of the Montgomery County Medical Society, welcomed the women to a society which is 135 years old. Dr. Fitzgibbons spoke on health "not being a police duty but rather an educational program." Dr. Barton spoke on the friendliness of the society and what it can accomplish. Dr. McGugan presented the auxiliary with a check for \$10 contributed by the county medical society. Following the session, the tea was served. Dr. Julius Schiller was the speaker at the January meeting. In the course of a brief address, the newly elected president of the medical society assured the auxiliary members of the society's cooperation in their work. Mrs. S. L. Homrighouse, president, conducted the business meeting at which plans were made for a dinner party to be held February 13.

Nassau. Nassau County had the honor to have as their distinguished guest the president of the American Medical Association, Dr. Nathan B. Van Etten, at the celebration of their fifth anniversary on January 28. The meeting was preceded by a dinner and a brief business session, conducted by Mrs. A. C. Martin, at the Garden City Hotel. Dr. Van Etten was introduced by Mrs. L. H. Kice, state president.

Queens. Twenty-five were present at the first of a series of "Membership Teas," held at the home of Mrs. Harold Foster, 34-07 103 St., the home of Mrs. Harold Foster, 34-07 103 St., on January 21. Three new members, Corona, on January 21. Three new members were presented by Mrs. Edwin Core, of Forest Hills, membership chairman. Tea was poured by Mrs. Michael M. Schultz, president. All had a very enjoyable afternoon.



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# Books

Books for review should be sent to the Book Review Department at 1313 Bedford Avenue, Brooklyn, N. Y. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and the interest to our readers.

## REVIEWED

**Diabetes Practical Suggestions for Doctor and Patient.** By Edward L. Bortz, M.D. Second edition. Octavo of 296 pages, illustrated. Philadelphia, F. A. Davis Co., 1940. Cloth, \$2.50.

The author has revised the material in this second edition and has brought it up to date so far as recent advances in diabetes are concerned. It is a well-rounded monograph, written in clear and simple style, and should prove useful to the patient suffering from diabetes. The reviewer finds it necessary to call attention to several aspects of the presentation which would prove misleading to the patient. For example, the color chart illustrating the approximate quantitative content of glucose in the urine based upon the qualitative test is not correct. A complete reduction of the copper solution occurs when 2 per cent or more of glucose is present. It is impossible above that concentration to determine its content with a qualitative analysis. Further, the statement that the dose of insulin in juvenile diabetes is based on the age of the patient is incorrect. No one who has had experience with diabetic juveniles would be willing to accept this statement. The dose of insulin depends entirely upon the severity of the diabetes, regardless of the age.

WILLIAM S. COLLENS

**Heart Failure.** By Arthur M. Fishberg, M.D. Second edition. Octavo of 829 pages, illustrated. Philadelphia, Lea & Febiger, 1940. Cloth, \$8.50.

It is a great pity that Fishberg thought it necessary to add forty odd pages to the latest edition of his excellent book, *Heart Failure*. The new material is doubtless worthwhile, but the additional bulk will not make the volume more attractive to students and practitioners. The vast majority of readers are not particularly interested in reading too detailed abstracts of literature, particularly if after plodding through such abstracts they are told that much of the work has been disproved.

The book as it stands now is an extraordinarily able digest and interpretation of a vast amount of material. No one can take issue with the choice of sources nor with the just appraisal, but it is unnecessarily verbose.

New material has been added to velocity studies, paroxysmal dyspnea, the picture of left and right heart failures, as well as to other chapters.

ANDREW M. BABY

**The New International Clinics. Original Contributions, Clinics, and Evaluated Reviews of Current Advances in the Medical Arts.** Edited by George M. Piersol, M.D. Volume III, New Series Three. Octavo of 358 pages, illustrated. Philadelphia, J. B. Lippincott Co., 1940. Cloth, \$3.00.

Some of the original communications are those on peptic ulcer, analysis of emotional factors in coronary disease, Mikulicz disease, and accidental injuries in office practice.

Cutler presents a valuable article on the "Present Concept of Erythrocyte-Sedimentation Rate." He describes a technique that completes the test in thirty minutes using a Cutler tube and a graph to show the most rapid drop in millimeters in any five-minute interval. This is the maximum sedimentation rate. Normal standards and the interpretation of abnormal rates are given.

There are clinics from the Cornell University Medical College and the New York Hospital, on twelve topics. Heuer points out the advantages of early diagnosis and treatment in gallstone disease from a study of 1,142 patients.

A review of ten years' progress in obstetric analgesia from The Johns Hopkins Hospital should be of much interest to obstetricians, as it is nicely presented by L. M. Hellman.

W. E. MCCOLLUM

**Public Health Administration in the United States.** By Wilson G. Smilie, M.D. Second edition. Octavo of 553 pages, illustrated. New York, The Macmillan Co., 1940. Cloth, \$3.75.

This book first appeared five years ago and now in its second edition is brought up to date. The expansion in the field of medicosocial work during the past five years is notably evident in the growth of public interest in national health affairs. The development of the national health program is reviewed by Dr. Smilie.

Increased knowledge concerning the epidemiology of disease enables more definite control measures to be applied to the communicable diseases. The usual basic activities of a public health organization are considered, particular attention being given to the newer knowledge with respect to nutrition. It is gratifying to note the increased recognition of nutritional problems as a phase of public health work.

This book is of interest primarily to public health administrators, but the private physician will find much that is of direct concern to him in his everyday practice.

A. E. SHIPLEY

**Clinical Electrocardiography.** By David Scherf, M.D., and Linn J. Boyd, M.D. Octavo of 362 pages, illustrated. St. Louis, C. V. Mosby Company, 1940. Cloth, \$6.25.

The authors state in their introduction that they have undertaken to write the present volume because many recent books on the subject have devoted themselves to the main essentials of the subject and have created the impression that electrocardiography is extremely simple.

[Continued on page 412]

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## Books

[Continued from page 411]

Those thoroughly acquainted with the subject realize that this is not so and that many erroneous diagnoses follow this impression

The book is designed for those who have passed the beginner stage and draws attention to many variations that can take place in both normal and abnormal tracings. All the important phases of the subject are discussed and various theories analyzed. Because of the importance that coronary disease has assumed, it seems as though more space could have been devoted to this. Other subjects of possibly less importance have been much more exhaustively dealt with. A critical discussion of disputed points is given, and no extreme view seems to be taken. A bibliography is attached to each chapter so that original articles may be consulted if desired. The printing and figures are excellent.

Altogether this volume seems to have accomplished its purpose and is a good addition to electrocardiographic literature.

J HAMILTON CRAWFORD

**Physical Diagnosis.** By Ralph H Major, M.D. Second edition. Octavo of 464 pages, illustrated. Philadelphia, W B Saunders Co., 1940. Cloth, \$5.00

The second edition of Major's *Physical Diagnosis* is an improvement on the first which means that it is a good book indeed. The peculiar virtues of Major's treatment of his material are still much in evidence. The historical approach, numerous citations of classic descriptions, abundant and well-chosen photographs, and, above

all, the omission of irrelevant chapters on x-ray, electrocardiography, and laboratory diagnosis which burden other similar books are worthy of praise. Recent innovations in physical diagnosis, such as Reich's method of enhancing tactile fremitus, are included. Major may be enthusiastically recommended by all teachers of the art.

MILTON PLOTT

**Atlas of Cardio-roentgenology.** By Hugo Roesler, M.D. Folio of 124 pages, illustrated. Springfield, Charles C Thomas, 1940. Cloth, \$8.50

This is a painstaking summary of a fairly wide cross section of cardiac pathology, correlating anatomic findings together with clinical, electrocardiographic, and roentgenologic examinations. Studies of postmortem findings and their relationship to roentgenologic data form the most valuable part of the book. Cross sections of the heart and great vessels in various planes furnish an excellent foundation for orientation so necessary in the interpretation of roentgenologic examinations.

The material in the book covers a generous variety of types of cardiac pathology, examples of early changes, as in aortitis, might add to its value. It is to be regretted that an index was not included. In the reviewer's opinion this would enhance its value as a reference work.

The author is to be congratulated for his careful and concise contribution to the study of cardiology.

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Granted the normal being prefers to view hospitals from the exterior, men and women in severe pain or with no other alternative for saving their lives or limbs, or sight, certainly must be willing to enter a hospital. If during convalescence, acute nostalgia becomes a serious symptom and creates an unwilling guest, it is largely because the hospital is not equipped to compete with "home sweet home."

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To which the friend's rebuttal might have been, "No, but neither is the medicine that his prescription obtains for you at the pharmacy."

\* \* \*

Many parents have still to learn that the family physician's part in educational guidance is more than just a friendly interest or "good business"—that it is even more than a self-imposed duty. They should be informed that the doctor's share in "special education" is a part of the therapy in treating most cases of so-called "exceptional children," and—that the family physician is generally the best qualified person to prescribe the "special education" required.

\* \* \*

Under the heading "schools," the medical profession has other concerns as well as prescribing the proper sphere of welfare for handicapped children. If the medical practitioner watches this section of the JOURNAL,

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These schools have a significant part in the practice of modern medicine.

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# New York County Medical Societies

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County	President	Secretary	Treasurer
Albany	T O Gamble	Albany	F E Vosburgh
Allegany	W F Reedy	Wellsville	R W Blaisdell
Bronx	J Golomb	Bronx	J A Keller
Broome	C M Allaben	Binghamton	C Goodman
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Franklin	A J Vorwald	Saranac Lake	D C H Van Dyke
Fulton	B A Winne	Johnstown	L Tromante
Genesee	C M Graney	Batavia	P J Di Natale
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Monroe	C S Nash	Rochester	W A MacVay
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# NEW YORK STATE JOURNAL OF MEDICINE

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## *Editorial*

### "When We Meet Again"

April 28 to May 1, 1941—Buffalo The occasion, the annual meeting of the Medical Society of the State of New York. It is not too early for our members to set aside the time for their attendance this year. In view of the many grave questions and problems that confront the medical profession in the coming year, it is more than ever necessary that every physician who can do so should plan to attend, and to listen to the debates and deliberations in the House of Delegates. Only so can widespread understanding be acquired by the profession of the situations with which it is confronted. Already a huge army is in the making. Extraordinary problems in safeguarding the public health and welfare are arising daily. Large sections of the population are on the move to provide labor for the construction of vast new plants, cantonments, and public works.

New methods of treatment, new drugs and procedures will be discussed in the scientific sections as formerly. Expanding industry is creating new demands for men interested in the knowledge and technique of industrial hygiene. The operation of the now numerous plans for medical expense indemnity will be discussed. There are also new vistas being opened in the matter of physical and mental rehabilitation work in the state. New and more vigorous attacks upon the tuberculosis control problem are already under way. No matter what your interest is in the field of medicine you will profit by

attendance. And at the same time you will contribute by your presence to the steadily growing attendance at the meetings, this healthy growth is evidence to all of the vigor and vitality of your Society.

The scientific exhibit will be an education and an added stimulus to many. The war, lack of shipping facilities, and other economic factors have reduced imports of foreign-made goods. The challenge has been met by our manufacturers in many new and novel ways. We can assure you even at this early date that you will not want to miss the scientific exhibit which we hope will be larger and better this year than ever.

Section chairmen and committeemen have been concerned to present a program of outstanding merit. And while it is premature to write this early of details, they will shortly be published in full in the JOURNAL (April 1 issue). We are assured of the presence as a speaker at the banquet of Dr. W. W. Bauer known to many of you by voice at least as the commentator on the Wednesday night radio program of the A. M. A., "Doctors at Work."

The Women's Medical Society of the State of New York and the Woman's Auxiliary will meet at the same time. A record attendance is hoped for. When so much of importance is going on at Buffalo, when so much of vital concern to your professional welfare is being there transacted, can you do less than assist and

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Wyoming	C H Harville	Warsaw	O T Ghent
Yates	A S Jones	Penn Yan	R. F Lewis

minorities, and it has been the function of medical education properly to qualify and discipline physicians to exercise their special gifts and skills. Their postgraduate life and activity is continuously governed by and subject to those disciplines.

Recently we have seen in Europe, and today are beginning to observe here "astride our times like a colossal giant," a curious manifestation of democracy, a belief on the part of the crowd, the aggregate mass, that it has the right to impose and to give force of law to any notions which may occur to it in the course of the day. Call it public opinion if you will, or anything else you choose. It does act, and does impose, within or without the law, its wishes, the notions of the multitude. Slowly it has begun to supplant the minorities, to override them, to crowd them out, to overbear them without benefit of the disciplines which have been the minorities' minimum requirements for competency. Perhaps it is a phenomenon of the degeneration of the democratic principle. But whatever it is, it is here.

What will be its effect on medical education? The human material with which medical education deals has changed somewhat in the last quarter-century. In the secondary schools and colleges the increasing tempo of life has left little time

to do more than to instruct the people in the mere technique of modern life, there has been no time to educate them. They have been, shall we say, "inoculated with the pride and power of modern techniques and instruments," but of their roots and spirit they know little and care less. There is a virgin world in which they walk with pride and arrogance, with a consciousness of mass power because they know the technique of modern living and little else. This is the human material upon some of which the institutions of medical education must impose the iron disciplines of its traditions. To instill these disciplines in the past has required much time even with culturally better prepared human material. What of the future?

Public authority is in the hands of the representatives of the masses of the people. It is sensitive to the developing stresses both social and economic within the now global revolt of those masses in this developing democracy which are impatient for power and intolerant of anything which does not move at the same speed, intolerant of anything which seems to be stationary or retrogressive, which seems tied to the past and to exercise therefore counsel of negation.

What future does this portend for medical education? And for medical practice?

## Radio

It is of the utmost importance that the medical profession be continually in direct communication with the public it serves. This may sound strange to those who think of physicians as being always in communication with their patients, and even to physicians, who daily see and treat thousands of people. But a moment's thought will reveal that these thousands are only a small fraction of the public—and sick people at that. Therefore, the communication of individual physicians with that fraction of the public with which they come in contact centers largely about the disease or ailment from

which the individual seems to be suffering.

But physicians and the public have more to say to each other than that. It may not always have been so, but it surely is true now. There is that vast portion of the public which, usually in good health and spirits, does not know the physician, does not know what he is thinking about, does not realize the problems that confront him in his appointed task, does not know him as another human being. Medicine today is a cooperative effort as well as an individual skill. And it is fortunate that the

encourage your officers, your delegates, and your exhibitors by your presence?

You make the success of the meeting Come one, come all!

## Must Medical Education Be Revised?

A fluid American democracy under whatever political label you wish to put upon it seems now to be on the move in a direction which will involve, among other things, a more radical redistribution of economic wealth and power. What will be its effect upon medical education? We are already beginning to see some of its effects upon the current practice of medicine. Will medical education in general have to be fundamentally revised in order that the future practice of medicine may fulfill the popular conception of its social obligations?

We shall indeed be fortunate if, in the turmoil of present preparation for national defense and afterward, the institutions of this moving democracy can fully retain their heretofore fluid character. A free medicine has flourished in this democracy as it has never flourished before. We have passed through a recent maelstrom of social changes together with modifications of our former political points of view. These changes have subjected all our institutions to unusual stresses. These stresses have produced changes that at one point have been accelerated, at another, retarded, and at still another, redirected. These changes have occurred simultaneously and concurrently within the recent years, testing the vitality and fluidity of the democratic way of life.

This way of life has, however, yet to be tested by the further impact of external threat. It is probable that this impact will further accelerate the rate of social and economic change. If we conceive of this progressive and yet evolving democracy as moving at a rapid pace it becomes at once apparent that the inherently slower pace of medical education and practice will appear against the more rapidly moving background to be halted or even retrogressive. It is doubtful whether this evolutionary pace of medical education and practice can be accelerated.

In the popular mind it will appear to be recessive or create the illusion, wholly fictitious, of rigidity and fixation at a moment when men's eyes and minds are concentrated upon the more dramatic, colorful, and rapid motion of our fluid and evolving democracy. In the same way a moving wagon wheel in the cinema with relation to the speed of the camera may appear to stand still or even to be going backward while the wagon itself is moving forward.

Medicine may thus appear to be reactionary and unsympathetic to social change and political progressivism. And in a world of turmoil and political flux few will have the leisure or the inclination to distinguish between the appearance and the reality. For in the larger sense the world of reality as many of us have known it no longer exists. The program of possibilities which constitutes our present life is tremendous. It has suddenly "overflowed all the channels, principles, norms, ideals handed down by tradition."<sup>1</sup> And the past has thus become but counsel of negation.

Certainly, medicine—by its own insistence and practice—constitutes one of the truly disciplined minorities in the body politic, and the character of its educational institutions has been formed by the necessary function which they exercise in carrying forward those disciplines and imposing them upon the profession. Such disciplines, evolved slowly in the past from the bitter realities of life and death, are the irreducible minimum of the educational function in medicine. There are in the social complex of human organization activities and functions of the most diverse order which cannot be carried out without certain special gifts and disciplines. These functions have been generally exercised heretofore by qualified

<sup>1</sup> *Revolt of the Masses*. Ortega y Gasset. W. W. Norton, New York, 1932.

## Immunization with Tetanus Toxoid

Since 1934 the medical staff of the United States Navy has used tetanus toxoid for active immunization of a large number of its personnel against tetanus. To date, no case of tetanus has appeared in those injected with the alum-precipitated toxoid.

The procedure described by Hall<sup>1</sup> is to give two injections, the second after an interval of eight weeks, to afford basic immunity. Every four years, thereafter, the toxoid is administered to maintain immunity at a high level. If an injury occurs in the interim, an injection is given to raise rapidly the blood antitoxin. The tetanus toxoid is preferably injected intramuscularly so as to reduce the soreness to a minimum and to eliminate cutaneous reactions which may be unpleasant. The recommendation that immunity is enhanced when the subcutaneous route is employed finds no con-

fimation in Hall's report, since the antitoxin titer was the same in cases where severe skin reaction occurred as in those where none was manifest. Immunity depends not so much on the blood level of antitoxin as upon the tissues' ability to produce antitoxin.

This large-scale study over a period of six years is an important addition to medical preparedness. Tetanus can now be added beside the many diseases against which the growing number of recruits are being immunized during their period of training. Many minor cuts or abrasions are overlooked by the soldier who is at all times exposed to infection with the tetanus bacillus. Immunity conferred by the alum-precipitated, tetanus toxoid will eliminate the cases of tetanus which result from carelessness or the inability to receive or administer antitoxin in time. There seems little doubt but that it will be universally adopted by the military services.

<sup>1</sup> Hall, W. W. *Ann Int Med* 14 565 (1940)

## American College of Surgeons to Hold Sectional Meeting in Pittsburgh

Surgeons, members of the medical profession at large, and executive personnel of hospitals in eight states and the District of Columbia will gather in Pittsburgh March 17 for a three-day Sectional Meeting of the American College of Surgeons. The participating states will be Pennsylvania, Ohio, Virginia, West Virginia, Delaware, Maryland, New Jersey, and New York. Headquarters will be at the William Penn Hotel.

Distinguished surgeons from all parts of the country will address the scientific sessions and lead the conferences and panel discussions. Among them will be the president of the College, Dr. Evarts A. Graham, of St. Louis, professor of surgery at Washington University Medical School; Dr. John Scudder, instructor in surgery, Rockefeller Institute for Medical Research, New York City; Dr. Frank E. Adair, attending surgeon at Memorial Hospital, New York City; Dr. Robert H. Kennedy, associate clinical professor of surgery, Columbia University, New York City; Dr. George P. Muller, of Philadelphia, past-president of the College; Dr. Alton Ochsner, director of the department of surgery, Tulane University, New Orleans; Dr. Alfred W. Adson, professor of neurologic surgery, Mayo Foundation, Rochester, Minnesota; Dr. Edwin C. Hamblen, associate professor of gynecology and obstetrics, Duke University, Durham, North Carolina; Dr. Emil Novak, associate in clinical gynecology; and Dr. John M. T. Finney, Jr., associate in clinical surgery, Johns Hopkins University, Baltimore; Dr. William E. Lower, director of the Cleveland Clinic Foundation, Cleveland; Dr. Robert S.

Dinsmore and Dr. Charles C. Higgins, the Cleveland Clinic Hospital; Dr. Fred W. Rankin, of Lexington, Kentucky; Dr. Roy D. McClure, surgeon-in-chief, Henry Ford Hospital, Detroit; Dr. Philip H. Kreuscher, associate professor of surgery, Northwestern University, Chicago; and many others from middle western and eastern states.

Operative and nonoperative clinics and demonstrations will be held each day of the meeting in the twenty-one hospitals in Pittsburgh approved by the American College of Surgeons. At the headquarters hotel there will be educational and scientific exhibits and showings of motion pictures portraying surgical and hospital procedures.

A hospital conference, also sponsored by the American College of Surgeons, will be held concurrently with the surgical meeting. New points of view on a variety of subjects of interest to hospital personnel will be presented by outstanding authorities in the hospital field.

On Wednesday evening, March 19, in Carnegie Music Hall, outstanding speakers on medical and health subjects will address the public at a Meeting on Conservation of Health under the sponsorship of the American College of Surgeons with the cooperation of the educational, scientific, civic, religious, and welfare organizations of Pittsburgh.

The Committee on Local Arrangements for the Sectional Meeting consists of Dr. Otto C. Gaub, chairman; Dr. Frank R. Bailey, vice-chairman; Dr. Nelson P. Davis, vice-chairman; and Dr. John W. Stinson, secretary. The chairman of the subcommittee on clinics is Dr.

radio now provides a means whereby the doctor and the public, the healthy public as well as the ailing individual, may discuss their common aims. More and more physicians are convinced of the necessity for direct communication with the public if the cooperative effort is to succeed and to keep pace with the tempo of modern times, if the common problems are to be fully understood, if the well public is to comprehend its friend and fellow citizen, the physician, in the framework of a common purpose and against the background of his professional activities.

The progressive physician of today welcomes the radio—as he did the telephone not so long ago—as another means whereby he may better serve the public interest, not alone the interest of the sick but also the interest of the healthy. That is the reason why the Medical Society of the State of New York, at the instigation of a forward-looking House of Delegates in 1940, has been intensively studying the question how the profession and the

public may best collaborate in obtaining a comprehensive and fruitful discussion of our common problems and objectives.

For the problems and objectives of the citizen-physician and the public are the same. Yet often the language of the physician and that of the public differ.

A radio program sponsored by the Medical Society of the State of New York should be worthy of civilized human beings. There is no valid reason why a program, unless it is about relativity or the conjugation of Greek verbs, cannot be made entertaining enough to attract a large group of intelligent people. We hope and affirm that such minorities have not as yet lost all privileges and rights. Yet to prepare such programs necessitates much study and technical skill.

Radio is a new modality in the hands of physicians. It must be used with as much skill and technical knowledge as the x-ray or diathermy. If it is so used, much good should result for everyone.

## A Notable Feat

The short paper by Jordan<sup>1</sup> and the editorial comment<sup>2</sup> in the same issue of *Lancet* demonstrate clearly what persistent and painstaking effort will accomplish in eliminating tuberculosis. The report covers a period of ten years, at the end of which time the percentage of positive reactors to 1:1,000 Koch's OT had fallen from 14.1 to 6.75 in a total of 10,907 children examined!

Jordan attributes this drop in the number of reactors to his rigid adherence to the following program: Educational talks and demonstrations to children, parents, and civic bodies, roentgen examination of all reactors, investigation of all suspects and a scrutiny of any possible contacts, follow-up of all reactors with x-ray studies, separation of known cases of pulmonary tuberculosis from contact with children and young adults, and, finally, "stressing the importance of the cattle testang

program, and seeing that it is religiously followed through."

Medicine owes a great deal to the laboratory animal. But "the veterinarians of the United States have set the finest example of tuberculosis control of all time. By following their example, modifying the program as necessary for human beings, Dr. Jordan has set an example which should be followed by every community in the nation." That under his program the incidence of infection has decreased is vastly more significant than any statistical figures depicting morbidity or mortality. It is significant that during this time fourteen teachers with unsuspected clinical tuberculosis were removed as a source of infection, and the investigation has extended to include all employees who come in contact with children. This work is evidence beyond question that "tuberculosis, in communities where transients are not a problem, can be reduced to a minimum."

<sup>1</sup> Jordan, L. S. *Lancet* 60: 502 (1940)  
<sup>2</sup> Editorial. *Lancet* 60: 513 (1940)

# FOOT FUNCTION CORRELATED WITH ANATOMIC, CLINICAL, AND LABORATORY DATA

R PLATO SCHWARTZ, M D , and ARTHUR L HEATH, B S , Rochester, New York

PARTICULAR ideas regarding foot function have been in use for many years and have become established through repeated examination of the feet in repose. For these reasons foot function is described in terms of characteristic motions and of the names of muscles that activate the respective joints while the foot is at rest. Such information applies specifically to motions of the non-weight-bearing foot on the leg.

But clinical problems in relation to weight bearing do not develop in association with feet in repose. These difficulties are experienced by both children and adults while standing and walking. The high incidence of pronation in feet of persons of all ages makes the characteristics of this abnormality common to most of the clinical problems presented for treatment.

For these reasons clinical observations and laboratory investigations have been directed to the determination of the behavior of the foot with and without the related muscular contractions while walking. The application of this approach requires that we should emphasize the functional characteristics of the skeletal structures of the foot.

These osteoarticular structures develop from cartilage during the period of growth. They are subjected to the stress and strain while supporting body weight during the years of development from cartilage into bone. This influence of function on ultimate form and structure is of primary importance. Malfunctions of the foot during childhood are ultimately combined with the functional limitations provoked by shoes in later decades.

The primary cause of clinical problems in and related to the feet is present throughout life. It is directly associated with the developmental characteristics of the skeletal structures and the medial displacement of the tibia on the os calcis. These factors express their initial influence when the child begins to stand. The structure of the foot and its relationship to the leg direct the body weight

onto the medial aspect of the feet which invariably pronate when children begin to walk. At this time the cartilaginous skeleton of the foot is most susceptible to the reactions defined by Wolff's law "Every change in the form and function of bones, or in their function alone, is followed by certain definite changes in their internal architecture, and equally definite changes in their external conformation, in accordance with mathematical laws."

These cartilages are therefore subjected to influences that cause the proximal surface of the os calcis to rotate inward under pressure from body weight. For this reason the external shape and internal architecture of the bones of the foot are predetermined to express the characteristics of pronation in adult life.

There is no better explanation for the prevailing incidence of pronation in both children and adults. While regarding the influence of these factors on the growing architecture of the foot as a cause for clinical problems, we can also emphasize a fundamental reason why some feet do not pronate.

These are exceptional instances. They likewise require analysis of the characteristics of the os calcis, cuboid, astragalus and their relationship to the tibia. We find that these relationships combine to prevent outward rotation of the heel when the feet support body weight. The axis of weight bearing of the os calcis remains parallel to that of the tibia. With the os calcis in this position, lateral motion essential for pronation is prevented by the interlocking mechanism between the os calcis and the cuboid.

This concept of the factors that promote and prevent pronation may easily be demonstrated on any child or adult. For example, if the examiner will rotate the heel inward, the forefoot cannot be passively rotated into the valgus position. If the heel is then held in external rotation, the forefoot will easily take the valgus position by passive manipulation (Fig 1). This observation has repeatedly been made during the past six years with but one exception to the rule. When an operation was performed on this patient, it was found that the characteristic interlocking relationship of the calcaneocuboid joint was

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 8 1940

From the Department of Surgery Division of Orthopedics, Rochester University School of Medicine and Dentistry

Associate professor of orthopedic surgery and research associate, respectively

John H. Alexander, on exhibits, Dr. Samuel R. Haythorn, on the Meeting on Health Conservation, Dr. Merle R. Hoon, on program, Dr. Grover C. Weil, on public relations, Dr. J. Huber Wagner, on reception and entertainment, Dr. Lyndon H. Landon, on speaking equipment and motion pictures, Dr. Harold G. Kuehner, and on transportation and hotels, Dr. Joseph A. Soffel.

The American College of Surgeons was founded in 1913 by surgeons of the United States and

Canada, with the object of elevating the standards of surgery. It now has a total fellowship of 13,000 surgeons who have met the high standards of education, training, experience, and professional and ethical standing required for admission. The chairman of the Board of Regents is Dr. Irvin Abell, of Louisville, Kentucky. The associate directors are Dr. Bowman C. Crowell and Dr. Malcolm T. MacEachern, of Chicago, where the headquarters office is located.

## They Can't Wait Much Longer

### Stricken Civilians in England and Greece Need Your Help Today

The Medical and Surgical Supply Committee of America desires to send 1,000 emergency operating sets in khaki canvas rolls and 1,000 fitted first-aid metal cases. These units have been approved, both as to contents and containers, by the surgeons and physicians of this committee. Bombed hospitals, emergency first-aid posts, air-raid shelters, and recently opened auxiliary provincial hospitals are in dire need of instruments to replace losses made almost nightly!

This is a frank appeal to you to come to the assistance of the stricken civilian population of Great Britain and her Allies. If you can interest anyone or any group of people (clubs, factories, commercial organizations, service groups) in your vicinity in the purchase of one or more of these sets, please let us know. Each set will bear a plate with the donor's name, if desired. The price, delivered in England, insurance and shipment included, is \$200 for the Emergency Operating Set and \$70 for the First-Aid Fitted Case.

*Please make checks payable to Arthur Kunzinger,  
Treasurer, Medical and Surgical Supply Committee of  
America, 420 Lexington Avenue, New York City*

In the first instance a young man had feet which revealed perfect balance before all of the intrinsic and extrinsic muscles of the right foot were paralyzed by complete section of the right sciatic nerve. Although he walked unaided by any form of support for three and one-half years the conformation of the foot remained perfectly normal. We must recognize that the maintenance of alignment between the foot and the leg remained unchanged with use in stance and locomotion, although there was a total absence of muscle function in and related to the right foot. Since the muscles could play no part in "supporting the arches and the maintenance of proper balance of the leg on the foot," the fulfillment of this function must have been expressed by the osteoarticular structures and their relationship to the tibia.

In the second instance special training of the patient had produced normally well-developed extremities. The excellence of coordination was indicated by the fact that she was an advanced pupil in ballet dancing. Bilateral pronation prevailed in standing and walking, but it was fully corrected when she stood on her toes. In the latter position there was a reflex contraction of the posterior tibial muscle.

This patient represents a daily clinical experience characterized by one essential difference. During her four years of ballet dancing this 9-year-old girl had acquired a maximum strength of all extrinsic muscles of the foot, including the posterior tibials. Nevertheless, she had the average degree of pronation, without symptoms, for a child of her age.

By virtue of its origin and insertion, the posterior tibial is the most important extrinsic muscle related to pronation at any age. Any normal individual can correct pronation by voluntary contraction of the posterior tibial in the act of standing and walking. Such voluntary effort cannot be long sustained because of fatigue if not discomfort. In contrast with this required voluntary contraction in stance and locomotion, the posterior tibial muscle contracts reflexly in the act of standing on the toes. By virtue of this reflex contraction, the heel rotates from the valgus to the neutral or varus position, and all characteristics of the pre-existing pronation disappear. This was the functional reaction of the posterior tibial under influences of superincumbent weight as observed in the 9-year-old girl. The young man did not pronate in stance or locomotion although



FIG 2 K M, aged 26. Complete loss of all muscle function and sensation below right knee, no pronation.

there was complete paralysis of all muscles below the right knee, pronation was also absent on the normal left extremity.

These 2 cases, therefore, emphasize that the stability of the leg on the foot in stance and locomotion is not entirely determined by the relative strength of the extrinsic muscles. These clinical observations are further explained by simultaneous records of locomotion and function of the extrinsic muscles.

We have recorded the duration and sequence of contraction of the posterior tibial, anterior tibial, extensor hallucis proprius, extensor digitorum communis, peronei, gastrocnemius, and soleus through the Achilles tendon in relation to the duration and sequence of weight bearing on heel, midfoot, and forefoot.

From these records the functional relationships of the muscles have been measured to the tenth of a second. We are particularly concerned with the sequence and duration of contraction of the posterior tibial and peronei.



FIG 1A



FIG 1B

FIG 1A With the heel fixed in the neutral or varus position the forefoot cannot be put in valgus B With the heel in valgus the forefoot readily takes the valgus position.

replaced by plain surfaces on these bones

In this connection we are all aware of the wide variation in the morphologic characteristics of bones in corresponding feet Wolff's law is written in every one The gross characteristics that differentiate one bone from another in the human foot have been determined by the function of walking The variations found in like bones from 50 adult skeletal feet represent the difference in the function of locomotion which was a personal characteristic of the individual

The principles thus far stated have emphasized the functional characteristics of the skeletal structures of the foot Primary consideration has been given to their functional importance in favoring or preventing pronation In relation to these principles we may refer to clinical evidence from daily practice

On August 26, 1937, K M, a white man, 22 years old, sought relief from complete loss of sensation and muscle function in the right leg and foot Eighteen months had elapsed since he had suffered a compound comminuted fracture in the distal third of the right femur The fracture had healed and he could walk unassisted without apparatus, crutch, or cane Operation revealed that the sciatic nerve had been completely severed at the time of the accident Despite the fact that

both intrinsic and extrinsic muscles of the foot had been paralyzed during a full year of weight bearing on the extremity, he had no pronation, nor was there any pronation of the uninvolved left foot This was also the status of the patient when he was seen on April 10, 1940, over four years after the accident (Fig 2)

The second patient was a 9-year-old girl who had no complaints During the past four years she had become proficient as a ballet dancer Her mother had become concerned about the increasing lateral deviation of the great toes, particularly the left Examination revealed bilateral pronation, the left foot was worse than the right This relative degree of pronation was present in relation to both stance and locomotion When she was asked to stand on her toes, it was noted that the valgus position of the os calcis was fully corrected and that the previously existing pronation likewise had disappeared (Fig 3)

In the light of the facts presented by these 2 patients we must reconsider the traditional statement that exercises should be used to develop the intrinsic and extrinsic muscles of the foot in order that their maximum efficiency in function might adequately support the arches and maintain the best balance of the leg on the foot while standing and walking

the act of standing on the toes the reflex or involuntary contraction of this muscle removes all of the pre-existing characteristics of pronation. On the basis of strength the posterior tibial demonstrates its power to serve this function in all normal children and adults. For this reason the prevailing incidence of pronation in all age groups cannot be adequately explained on the basis of weak muscles. Nor can the absence of pronation be accounted for on the basis of strong muscles.

Both the clinical evidence and the simultaneous records of locomotion and extrinsic muscle function lead to only one conclusion. The presence or absence of pronation is primarily dependent upon the maintenance of a parallel between the axis of weight bearing of the os calcis and that of the tibia.

The strength of the posterior tibial is normally adequate for this purpose, but in normal stance this muscle is not called upon to exert its functional efficiency. Under the influence of body weight the os calcis rotates into valgus, the astragalus sinks into position, and the foot presents the characteristics of pronation. The occasional absence of pronation cannot be attributed to exceptional strength or to the sequence and duration of posterior tibial contraction in relation to the peroneal muscles. It is more properly accredited to those essential osteoarticular relationships that maintain the parallel axis between the heel and the leg, thereby locking the cuboid and preventing pronation of the foot.

### Conclusion

Clinical experience and laboratory investigation require that we reconsider the relationship of pronation to the strength of the extrinsic muscles of the foot.

Clinical evidence presented proves that perfect alignment between foot and leg can be maintained during four years of use following complete paralysis of all intrinsic and extrinsic muscles of the right foot.

The presentation of a second patient proves that unusually well-developed muscles do not prevent pronation in stance and locomotion.

Simultaneous records of muscle function and foot function while walking prove that the reflex contraction of the posterior tibial

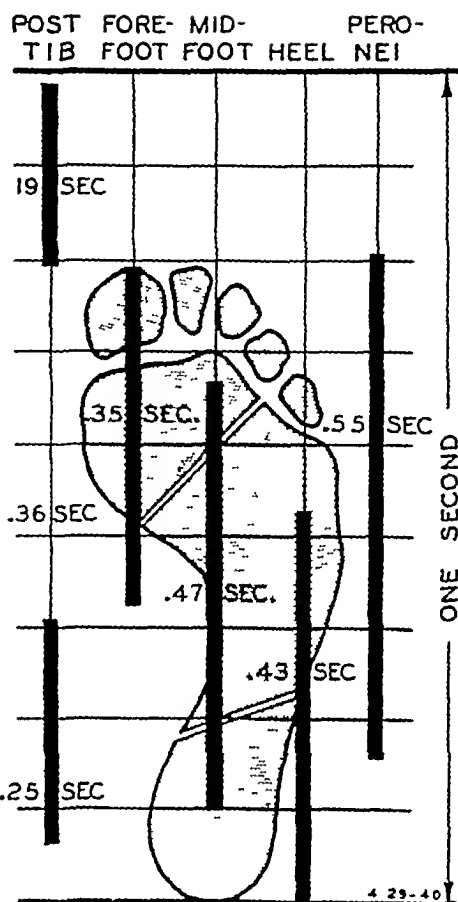


FIG. 4. Average sequence and duration of weight bearing on heel, midfoot, and forefoot as related to sequence and duration of contraction of the posterior tibial and peroneal muscles.

is inadequate for prevention of pronation.

Both the presence and absence of pronation are explained on the basis of the functional characteristics of the os calcis, cuboid, and their physical relationship to the astragalus and tibia. A neutral or varus position of the os calcis does not permit pronation of the forefoot.

Muscle exercises are contraindicated for the correction of pronation. Treatment is limited to measures that will maintain a neutral or varus position of the os calcis.

### PHYSICIANS NEEDED

A total of 9,100 physicians, of whom 5,300 must be procured during the next few months, will be required for the total strength of the Army of the United States next spring, which will be approximately 1,400,000 men, the surgeon general of the

Army declares in an outline regarding the participation of the Army Medical Department in the 1940-1941 military training program, published in the *Journal of the American Medical Association* for December 7.

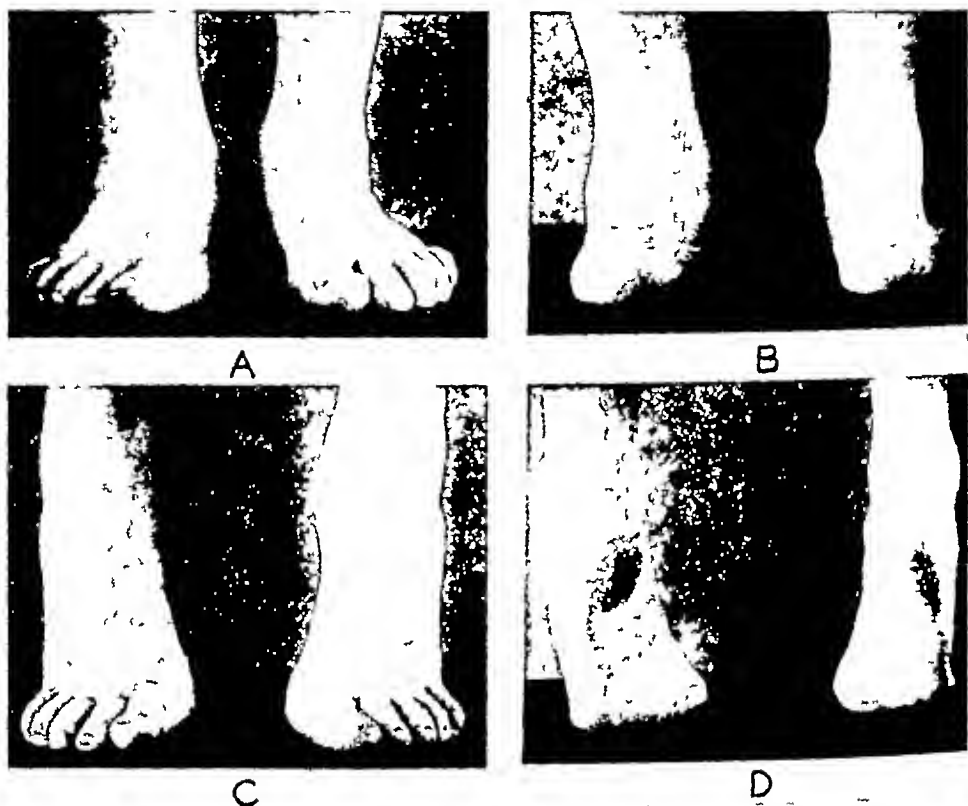


Fig 3 G S, aged 9 Four years training in ballet dancing A and B Bilateral pronation C and D Reflex contraction of posterior tibial muscles corrects pronation, heels in varus position

muscles as related to the beginning and duration of weight bearing on the heel (Fig 4)

The heel receives and supports body weight for 0.436 seconds. The posterior tibial muscle contracts simultaneously with placement of the heel on the floor, but its duration of contraction is only 36.1 per cent of the total stance phase of the step, 0.694 seconds, 57.5 per cent of the total time the heel is on the floor. Therefore, it is evident that this short period of reflex function of the tibialis posterior does not prevent the foot from pronating while walking.

This too early discontinuance of a positive force that could prevent pronation is accompanied by peroneal contraction which further provokes the characteristics of pronation in each step. The peronei begin to contract 0.166 seconds after the heel contacts the floor and continue to contract for 79.8 per cent of the stance phase of the step as against 36.1 per cent previously stated for the posterior tibial.

These measurements emphasize the impor-

tance of knowing the relative sequence and duration of muscle function in the act of walking. An understanding of these values immediately introduces a fundamental change in the point of view regarding the cause and prevention of pronation.

It becomes evident that relative muscle strength is important only when opposing muscles are reflexly called upon to contract simultaneously. Herein we are confronted with the necessity of evaluating the relative efficiency of muscle function in terms of relative strength, sequence, and duration of contraction as related to its antagonist.

Evaluation of relative efficiency of muscle function should not be based upon determination of relative strength of muscles while the patient is in repose. The relative sequence and duration of contraction is essential information without which valid conclusions are not possible.

As previously stated, pronation is easily corrected by voluntary contraction of the posterior tibial in standing and walking. In

the act of standing on the toes the reflex or involuntary contraction of this muscle removes all of the pre-existing characteristics of pronation. On the basis of strength the posterior tibial demonstrates its power to serve this function in all normal children and adults. For this reason the prevailing incidence of pronation in all age groups cannot be adequately explained on the basis of weak muscles. Nor can the absence of pronation be accounted for on the basis of strong muscles.

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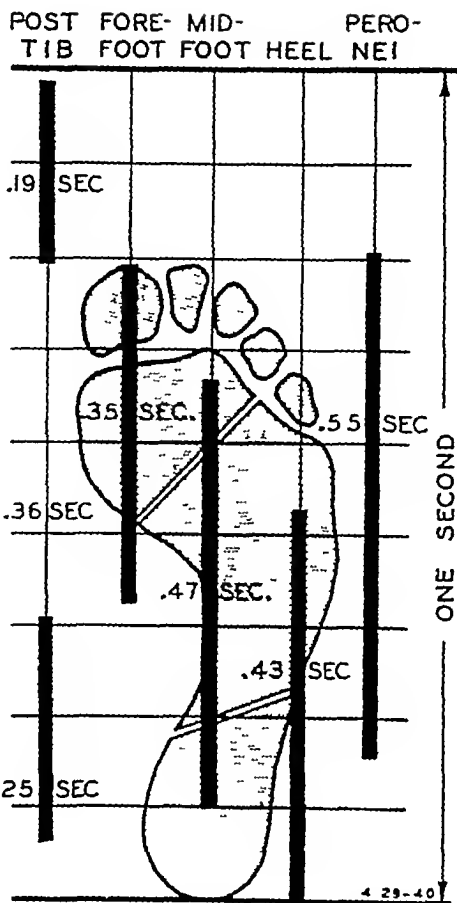


FIG 4 Average sequence and duration of weight bearing on heel, midfoot, and forefoot as related to sequence and duration of contraction of the posterior tibial and peroneal muscles

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# IMMUNE GLOBULIN (HUMAN) IN THE MODIFICATION AND PREVENTION OF MEASLES

HAROLD W LYALL, Ph D , and PHILIP P MURDICK, Ph D , Albany, New York

IN VIEW of the higher mortality from measles in young children, it is generally accepted that its modification or prevention in those under 4 years of age is a desirable public health measure. The value under similar conditions of the various preventive agents that have been recommended—convalescent serum, parent's whole blood, and placental extract—appear approximately the same. Convalescent serum, because of the lack of suitable donors, is, however, difficult to obtain in sufficient quantity. Adult blood because of the greater volume that must be administered is not favored by physicians. Therefore, on the basis of reports by McKhann<sup>1,2</sup> of the satisfactory results from the use of an extract of human placentas and because of the availability of this material, the preparation and distribution of globulin solution (human) under certain restrictions was begun in 1935 by this division\*. Since that time and particularly during 1938 and 1939 when the incidence of measles was high a considerable amount has been used by physicians. The reports received record the results obtained in private practice and an analysis of these data seemed of interest. For purposes of comparison, reports on the use of the globulin solution in children in institutions have also been included.

The proper dosage of globulin solution is related to a number of factors such as the age and physical condition of the child, the intimacy of exposure, and the interval between exposure and treatment. Since there is at present no satisfactory laboratory test for evaluating the potency of the product, its efficacy must be judged by the results of clinical trial. The method of preparation<sup>3</sup> is essentially that described by McKhann. To promote uniformity, each lot is prepared from the pooled extracts of at least thirty placentas, and the total solids content of the concentrated globulin solution is adjusted to between 5 and 7 per cent. An injection of from 2.5 to 5 ml. is at present recommended.

Table 1 gives an analysis by age groups of

the results obtained in 457 children treated in private practice. As would be expected, the greatest degree of protection is found in children under 6 months of age. Special interest, however, centers in the infants of this age group who developed measles notwithstanding preventive treatment, since this has a bearing upon the question of maternal transmission of immunity. The previous history relating to measles of the mothers of 16 of the infants from 10 days to 5 months old was secured. Of the 3 in the series who developed measles—2 infants 3 months old and one 2 months old—the mothers of 2 gave a history of measles and that of the third did not. All but 2 of the mothers of the remaining 13 infants who did not develop measles were recorded as having had the disease. The fact that the incidence of measles was highest in the group between 1 and 3 years of age is of interest, but this could not be correlated with differences in dosage, degree of exposure, or interval between exposure and treatment. It suggests that maternally transmitted immunity has disappeared at this age and that whatever natural immunity may possibly be acquired has not developed up to this time. In spite of the greater incidence of measles in this group, failure to modify or prevent the disease occurred in only 7.1 per cent of the cases. This figure compares favorably with the results in the other groups and also with those reported by McGavran<sup>4</sup> for children treated in private practice.

Six severe cases of measles were reported. Three occurred in children who were healthy at the time of exposure and had no subsequent complications. One recovering from a mastoid operation had a cervical adenitis with a return of the mastoid infection. Another developed measles following bronchopneumonia complicated by pyelonephritis. The sixth child, who had bronchitis, developed otitis media following measles. All recovered.

The results of preventive treatment in 201 children in institutions are analyzed similarly in Table 2. That the intimacy of contact among them is, on the whole, greater than that in the groups given in Table 1, which include both intimate and casual contacts, is indicated by the relatively less complete pro-

From the Division of Laboratories and Research, New York State Department of Health.

\* The placentas were obtained through the courtesy of the Albany Hospital and the Brady Maternity Hospital.

TABLE 1—RESULTS OF TREATMENT OF CHILDREN IN PRIVATE PRACTICE

Age Groups,* No	No Measles		Mild		Measles Moderate		Severe	
	Cases	Percentage	Cases	Percentage	Cases	Percentage	Cases	Percentage
0-5	42	89.4	5	10.6				
6-11	82	74.5	24	21.8	3	2.7	1	0.9
12-35	60	43.2	69	40.6	9	6.4	1	0.7
36 and over	112	69.5	33	20.5	12	7.4	4	2.5
All groups	296	64.8	131	28.7	24	5.2	6	1.3

\* Age in completed months

TABLE 2—RESULTS OF TREATMENT OF CHILDREN IN INSTITUTIONS

Age Groups * No	No Measles		Mild		Measles Moderate		Severe	
	Cases	Percentage	Cases	Percentage	Cases	Percentage	Cases	Percentage
6-11	18	72.0	2	8.0	5	20.0		
12-35	10	33.3	9	30.0	9	30.0	2	6.7
36 and over	65	44.6	52	35.6	22	15.0	7	4.8
All groups	93	46.3	63	31.3	36	17.9	9	4.5

\* Age in completed months

TABLE 3—EFFECT OF INTERVAL BETWEEN EXPOSURE AND INJECTION OF GLOBULIN SOLUTION ON DEVELOPMENT OF MEASLES (PRIVATE PRACTICE)

Days Between First Exposure and Injection	No Measles		Mild		Measles Developed Moderate		Severe	
	Cases	Percentage	Cases	Percentage	Cases	Percentage	Cases	Percentage
None	26	83.9	5	16.1				
1	35	80.9	11	18.2	2	2.9		
2	43	69.4	18	29.0	1	1.6		
3	60	60.6	38	30.4	3	3.0		
4	43	61.4	20	28.6	5	7.1	2	2.9
5	19	52.8	9	25.0	7	19.4	1	2.8
6	12	54.5	8	36.4	1	4.5	1	4.5
7	12	70.6	4	23.5	1	5.9		
8	5	55.6	4	44.4				
9 and over	21	48.8	16	37.2	4	9.3	2	4.6

tection afforded. There was also a greater proportion of moderate and severe cases, although there were no fatalities. Both groups were alike in that the greatest incidence of measles occurred between 1 and 3 years of age. No data for infants under 6 months are, however, available for this group.

Further discussion is limited to the children treated in private practice. The effect of the interval between the exposure to measles and the injection of the globulin solution is given in Table 3. Before the third day a larger percentage is protected against the disease, but thereafter there is no decided trend.

When the children are grouped according to the degree of exposure—definite, probable, or possible—only 2 in the "probable" group and none in the "possible" group developed the disease. If the 86 children in these two groups who did not contract measles are deducted from the total for all age groups in Table 1, there still remain over 90 per cent who either did not develop measles or had the disease in a mild form.

The dosage of globulin solution injected varied from 1 to over 6 ml. Since the reports did not indicate whether the physician's aim was to modify or prevent the disease, information as to the proper dosage for either purpose

is inadequate. However, a greater degree of protection was afforded by 5 ml. than by the lesser doses.

Mild reactions consisting chiefly of local soreness and swelling were reported in 25.4 per cent of the children, and an additional 3.9 per cent developed general reactions with fever or malaise. One child of this latter group also had hives five days following the injection. However, none of the reactions was considered alarming.

### Summary and Conclusions

1. In a series of 457 children who were reported as having had close or casual exposure to measles and who were treated with globulin solution in private practice, 93.5 per cent either had the disease in a mild form or were protected against it, in comparison with 77.6 per cent of 201 children in institutions.

2. The results indicate that children between 1 and 3 years are apparently more susceptible to measles than those in other age groups.

3. The greatest protection against measles in the children treated in private practice was obtained in those injected before the third day following exposure.

4 One dose of at least 5 ml of the product distributed appeared necessary if prevention of the disease was desired. However, the many variable factors make it impossible to recommend a definite optimum dose.

5 No serious or alarming reactions followed injections in this series.

## References

- 1 McKhann, C F, and Chu F T. *Am. J. Dis. Child* 45: 475 (1933).
- 2 McKhann, C F, and Chu, F T. *J. Infect. Dis.* 52: 268 (1933).
- 3 Wadsworth, A B. Standard methods of the Division of Laboratories and Research of the New York State Department of Health, ed 2, Baltimore, Williams and Wilkins Co., 1933, pp. 492-494.
- 4 McGavran, E G. *J. A. M. A.* 106: 1781 (1936).

## DISCOVERY OF NEW VACCINE AGAINST THE FLU

The recent discovery of a new vaccine against influenza is hailed by the *Journal of the American Medical Association* for January 11 as one of the most promising practical leads in research of recent decades because it opens up new fields of thought and investigation regarding immunity.

"The new vaccine against influenza recently described by Drs F L Horsfall, Jr, and E H Lennette of the Rockefeller Foundation challenges conventional immunologic theory," the *Journal* says. "The vaccine seems to have been a purely accidental discovery. About a year ago numerous normal ferrets were inoculated intranasally in the Rockefeller Foundation laboratory with the 1939 strain of human influenza virus. During the course of the resulting influenza, four of these animals developed a concurrent infection with ferret distemper. In order to prevent the spread of this epizootic to the stock animals, a formalized vaccine was prepared from the lungs and spleens of these ferrets and injected subcutaneously into each of the 157 normal animals of the ferret colony. Similar vaccines had been found effective in preventing the spread of ferret distemper on previous occasions.

"Two days after inoculation with this pre-

sumptive distemper vaccine, groups of the vaccinated ferrets were inoculated intranasally with massive doses of three antigenically distinct strains of human influenza virus. To the great surprise of the New York investigators, none of these animals developed experimental influenza. Injection of the presumptive distemper vaccine had apparently resulted in immunity effective against at least three antigenically different strains of influenza virus. This is a broader and more effective immunity than results from actual infection with the influenza virus.

"After numerous failures it was found possible to reproduce this mixed vaccine by inoculating ferrets simultaneously with mixtures of human influenza virus and canine distemper virus. The formalized vaccines thus produced not only protected ferrets against canine distemper but afforded almost absolute protection against massive intranasal doses of all strains of human influenza virus thus far tested. These vaccines have been tested on human volunteers. In all instances they produced a definite increase in mixed virucidal antibodies, apparently active against the available strains of human influenza virus."

## COURSES ON GENERAL MEDICINE

Dr William S Ladd, Dean of the Cornell University College of Medicine, has arranged a course on general medicine for the Tompkins County Medical Society. The lectures will be given at Ithaca at 8:15 P.M. and are as follows:

March 3, "Endocrine Problems in Adolescence," by Dr Harry H Gordon, March 19, "The Significance of Laboratory Tests and Methods in the Practice of Medicine," by Dr Ralph G Stillman, April 7, "Newer Chemotherapeutic Methods," by Dr Norman Plummer, April 15, "The Relation of Vitamins to Disease," by Dr Norman Jolliffe, May 5, "Abdominal Pain," by Dr Edward M Livingston.

Dr Albert F R. Andresen, of Brooklyn, has arranged a course of lectures on general medicine for the Columbia County Medical Society. These lectures will be held at the Hudson City Hospital, Hudson, New York, at 9:15 P.M. March 27, "Dietary Therapy in Gastrointestinal Disease," by Dr Andresen, on April 10 "The Diabetic Patient and the General Practitioner," by Dr Milton B Handelsman, on April 24, "Some Problems in Cardiac Diagnosis," by Dr J Hamilton Crawford, on May 8, "Practical Considerations of Blood Dyscrasias," by Dr Eugene R. Marzullo, on May 22, "Recent Advances in Therapeutics," Dr George H Roberts, all the doctors are from Brooklyn.

## EXAMINATIONS—AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The general oral and pathologic examinations (Part II) for all candidates (Groups A and B) will be conducted at Cleveland, Ohio, by the entire Board from Wednesday, May 28, to Monday, June 2, 1941, inclusive, prior to the opening of the annual meeting of the American Medical Association in Cleveland, Ohio.

Application for admission to Group A, Part II, examinations must be on file in the Secretary's Office not later than March 1, 1941.

Candidates for re-examination in Part II must make written application to the Secretary's Office before April 15, 1941.

The Board requests that all prospective candidates who plan to submit applications in the near future request and use the new application form which has this year been inaugurated by the Board. Address Dr Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

# THE IMPORTANCE OF CHRONIC SINUSITIS IN THE TREATMENT OF BRONCHIAL ASTHMA

R. CLARK GROVE, M D, New York City

HERCK,<sup>1</sup> of Freiberg, in 1844 first recognized the importance of nasal pathology in asthma. However, it was not until 1872 that the effect of sinus surgery upon asthma was demonstrated when Voltolini<sup>2</sup> reported 11 cases of asthma relieved by polypectomy. Since that time the frequency and importance of sinusitis in asthmatic conditions has been argued pro and con and the treatment has varied from conservative and radical surgery to no surgery at all. I<sup>3</sup> believe sinusitis is an important factor in asthma, and to justify this belief I will discuss the incidence of sinus infections in asthmatic patients, the type of pathology, the bacteriology of the sinus membranes, and the effect of sinus surgery.

Dundas-Grant<sup>4</sup> stated that 63 per cent of 107 cases of asthma had sinusitis. Gottlieb<sup>5</sup> found only 26 per cent of 117 cases. Kern and Schenck<sup>6</sup> in 1933 stated that in 400 cases of asthma 70 per cent had clinical sinusitis and 87.5 per cent showed x-ray evidence. Chobot,<sup>7</sup> studying children up to 15 years of age, found x-ray evidence of sinus disease in 67 per cent in 1933<sup>7a</sup> and 41 per cent in 1930.<sup>7b</sup> Kelley<sup>8</sup> recently reported that 89 per cent of 100 cases of asthma had rhinologic and x-ray evidence of sinusitis. Twenty-six per cent of the 89 cases had nasal polyps.

In a study published in 1932 and based on 688 cases of asthma, Cooke<sup>9</sup> found sinus disease to be the cause in 39 per cent of 257 cases in whom asthma began between 10 and 30 years of age, 65 per cent of 171 cases between 30 and 50 years, and 83 per cent of 42 cases after 50 years. Dental, tonsillar, pharyngeal, and primary pulmonary infections may also be causes of infective asthma. Infection was the sole cause of asthma in 34 per cent of the 688 cases, and combined with other sensitizations such as danders, pollens, or food it was an additional cause in 15 per cent, making a total of 49 per cent of all asthma caused by infections of all types. If we exclude the cases in the first decade, since the tonsils and lymphoid tissues of the nasopharynx and pharynx are more important at that time, we find that 53 per cent of the remaining 470 cases was

caused by infection with 8 per cent being due to primary pulmonary infections, leaving 45 per cent with sinusitis as the only cause.

It is interesting to note in passing that Bullen<sup>10</sup> in 1933 reviewed 93,000 admissions to three general hospitals in Rochester and found that 1.2 per cent warranted a diagnosis of disease of the paranasal sinuses. It was most frequent in the latter half of the first decade of life and between the ages of 30 and 50 or 55 years. He studied 400 of these cases of sinusitis and found that about one-fourth had some form of chronic nontuberculous pulmonary disease. 12.25 per cent of them had asthma, while 8.75 per cent actually had asthma begin at the same time as the sinusitis or later. Bullen was not very enthusiastic about sinusitis being a cause of asthma, but when we consider that the allergic proportion of our population is now approximately 10 per cent we know why his percentage of asthma was so low. I believe that sinusitis as a cause of asthma must occur in a person with an allergic constitutional tendency. Cooke<sup>9</sup> in the previously quoted group of 688 cases found that there was a positive antecedent history of allergy in 45 per cent of the entire infective group and 52 per cent of the atopic ones. Sixty-six per cent of 195 cases of asthma gave an antecedent history of asthma. Clarke, Donnally, and Coca,<sup>11</sup> however, quote 80 per cent.

The pathology of the nasal and sinus membranes in asthmatic patients is well recognized. In our experience almost 100 per cent of the pathology is of the hyperplastic type as contrasted with the suppurative. There may be exacerbations of the infection, and pus is present in the washings and the neutrophils predominate in the membranes at the time, but this is only temporary. The true hyperplastic membrane is much thickened, often infolding and polypoid, with desquamation of the cilia, a thickened hyalinized basement membrane, and in the tunica propria, marked edema, glandular hyperplasia, proliferation of the connective tissue, and eosinophilic, round, and plasma cell infiltration. In the chronic cases neutrophils are not frequent. The bronchial and ocular membranes have shown the same general characteristics on pathologic examination. Polyposis occurs in from 30 to

Read in part before the Post Graduate Assembly of the Bergen County Medical Society, Teaneck, New Jersey, March 21, 1940.

From the departments of Allergy and Otolaryngology, Roosevelt Hospital.

TABLE 1—RESULTS OF SINUS SURGERY IN 200 CASES OF ASTHMA

Postoperative Period Years	Cases	+	++	+++
1/2-1	41	16	14	11
1-2	45	14	20	11
2-3	35	8	11	16
3-4	26	10	11	5
4-5	27	4	9	14
5-6	26	9	10	7
Totals	200	61 (30.5%)	75 (37.5%)	84 (42%)

\* The symbol + indicates slight or no improvement in asthma, ++, definitely improved, +++, no asthma or a rare attack.

35 per cent of the cases with pathology. We have also had these membranes cultured and found that 87 per cent showed positive culture of one or more organisms. Only 1 of 29 antral membranes examined were negative, while 16 of 51 ethmoidal and sphenoidal membranes were negative. This is easily explained when we realize that most of these specimens were mucous or cystic polyps, the contents of which are usually sterile, the infection being in the cyst wall or underlying membrane. Thirty-four of the positive cultures yielded a single organism. This seems important from the standpoint of the value of the organism as an etiologic agent in the disease. When we compared the organisms obtained from 80 sinus membranes with those grown from previous washings of the antrums, we were surprised to find that in 43.7 per cent the membrane cultures were different from those recovered preoperatively. It is our belief that a clear return from irrigation of an antrum even with a negative culture does not indicate a normal or noninfected sinus.

The tissues removed from the sinuses were stained and in over 85 per cent bacteria were demonstrated definitely while the remaining 15 per cent was too questionable to be considered positive. The percentages obtained from a recent study of 108 membrane cultures were as follows: *Staphylococcus aureus*, 57 per cent, *Streptococcus viridans*, 43 per cent, hemolytic streptococcus, 25 per cent, *Micrococcus catarrhalis*, 3 per cent, nonhemolytic streptococcus, 3 per cent, *Bacillus proteus*, 2 per cent, pneumococcus, 39 per cent, diphtheroid bacillus, 2 per cent, no growth, 9 per cent. Kistner<sup>12</sup> in 1931 studied 400 sinus membranes of the nonpurulent type and found streptococci present culturally in 94.5 per cent of the cases. Rosenow of the Mayo Clinic checked some of his specimens microscopically and agreed that the membranes were infected. Hansel,<sup>13</sup> Piness and Miller,<sup>14</sup> Ashley and Frick,<sup>15</sup> and Balmer<sup>16</sup> believe that

organisms in the membrane are secondary invaders, but from our own studies we cannot accept this explanation.

The question now arises: How are we going to diagnose sinusitis in allergic patients? The answer is by careful history-taking, clinical, and x-ray examinations. The history of frequent colds, stuffiness, nasal discharge, anteriorly or posteriorly, sneezing, and headaches is important, but frequently all of these symptoms are absent. The nasal examination must include anterior rhinoscopy followed by nasopharyngoscopic examination. This is important, as, otherwise, discharge from the antrum, posterior ethmoids and sphenoids, and small polyps posteriorly may be overlooked. Transillumination should be done, but if this is clear the examination is not complete. Good roentgenograms are important, especially for diagnosing polyps and cysts of the antrum. Recently we have been injecting the antrums with an opaque medium and re-x-raying these doubtful cases. If necessary, lavage of the antrum should be done, and the discharge should be centrifuged and examined microscopically for eosinophilic cells. We usually make cultures of the return flow also.

Once the diagnosis of sinusitis is made, the form of treatment must be determined. If polyps are present in the ethmoids or sphenoids, they should be removed if the asthmatic and general condition justifies this procedure. By removal of polyps we do not mean a simple polypectomy but an exenteration of the ethmoids or sphenoids. Polyps, cysts, and extensive thickening of the membrane of the antrums require a Caldwell-Luc operation. We have not been satisfied with the result obtained by doing simple anrotomies or window resections. In conjunction with these operations, submucous resections and turbinectomies were done for the effect upon the sinus condition and not as a direct benefit to the asthmatic condition. If the sinus infection is of a low grade or mild form, antrum irrigations or occasionally an anrotomy, removal of adenoids and tonsils and infected teeth, and the use of vaccine, both autogenous and stock, will normally suffice for treatment. Regardless of the degree of sinusitis, complete allergic testing and treatment is necessary. A large number of cases of recurrent polyposis may be cured if the dust or other inhalant allergens are used when indicated, both before and after the operation. Blood examinations including Wassermann, kidney and chest examinations including x-rays and sputum for tuberculosis,

TABLE 2—AN ANALYSIS OF RESULTS OF SINUS SURGERY IN 200 CASES OF ASTHMA BASED ON COMPLETENESS OF REMOVAL OF ALL SINUS PATHOLOGY

Postoperative Period Years	Complete Surgery (102 Cases)			Incomplete Surgery (98 Cases)		
	+	++	+++	+	++	+++
1/2-1	2	6	10	15	8	1
1-2	4	11	6	9	9	5
2-3	3	5	14	5	6	2
3-4	5	6	5	5	5	0
4-5	0	5	12	4	4	2
5-6	0	3	5	0	7	2
Totals	14	36	52	47	39	12
		86 2%			52%	

\* The symbol + indicates slight or no improvement in asthma ++, definitely improved +++ no asthma or a rare attack

molds, and spirochetes are usually indicated. Recently the question of vitamin deficiency has been emphasized, and a good many of these patients improve with the addition of these concentrates to their medication. At present we are interested in the vitamin A deficiency in our chronic hyperplastic sinus infections.

In discussing the effects of sinus surgery upon asthma, I will not go into the details of the frequency of the various sinuses involved or the surgical technic but will simply state that our operative group includes 192 ethmoidectomies, 94 sphenoidectomies, 113 radical antrums (Caldwell-Luc type), 66 antrotomies (window resections), and 6 enlargements of the frontonasal duct.

## Results

The results of our sinus surgery in 200 cases of asthma are shown in the three tables. Table 1 analyzes the entire group according to the postoperative duration of time. We have not included the first six months because we believe the effects of the anesthetic and the reaction to handling infected tissues may be factors in the immediate improvement or the exacerbation of asthmatic symptoms. The improved cases represent 69.5 per cent of the total cases. It is also seen that as the duration of the postoperative period increases the ratio of the improved group to the unimproved increases. I believe that this is explained by the fact that there are secondary foci in the cervical and bronchial lymphatic glands and the bronchial mucosa, and these secondary foci heal slowly after the removal of the primary focus. The patients who did well from the immediate postoperative period and continued so for the six years may not have had such secondary involvement, and, on the other hand, the ones who never did well may lack the capacity to heal the secondarily involved infections.

TABLE 3—FURTHER ANALYSIS OF RESULTS OF SINUS SURGERY IN 200 CASES OF ASTHMA, DIVIDED ACCORDING TO ETIOLOGY OF ASTHMA AND TYPE OF OPERATION

	+	++	+++
Infective Asthma (102 cases)			
Complete surgery (45 cases)	8	16	21
		82%	
Incomplete surgery (57 cases)	31	20	6
		45 6%	
Combined Asthma (98 cases)			
Complete surgery (57 cases)	7	20	30
		87 7%	
Incomplete surgery (41 cases)	14	20	7
		65 9%	
Window Resections (27 cases) (Antrotomies)	16	6	5
		40%	
Radical Antra (94 cases)	23	32	39
		75 5%	
Radical Antrum Following Win- dow Resection (19 cases)	4	8	7
		79%	

\* The symbol + indicates slight or no improvement in asthma ++, definitely improved, +++ no asthma or a rare attack

Table 2 divides the 200 patients into those who have all the indicated sinus surgery completed and those who for one reason or another were still incomplete. The complete group includes the radical antrums and ethmoidal and sphenoidal operations, while the incomplete group includes the simple removal of polyps and middle turbinates and antrotomies. Also, if ethmoidal and antral operations are indicated and only one is done or if both sides are involved and only one is operated on, this case is classified as incompletely treated surgically. The difference in the effect upon the asthma is quite striking. The complete group showed an 85 per cent improvement, while the incomplete group showed only 54 per cent.

In Table 3 we have classified the 200 cases according to the type of asthma, that is, purely infective and infective associated with skin-sensitizations, the so-called combined type. The results of complete and incomplete sinus surgery in these two types is then analyzed. The combined type showed a better result. This group was also treated with injections of the indicated allergens elimination. Both types were treated in the majority of cases with autogenous vaccines made from the sinus membranes removed at operation.

Table 3 also includes a comparison of the results obtained after performing an antrotomy or a radical antrum operation and 9 cases who had a radical operation performed secondary to a previous antrotomy. The radical antrum cases showed almost twice as great an improvement.

## Summary

Disease of the paranasal sinuses is an important focus of infection in asthma. I believe that infective asthma is the result of a sensitization to bacteria or to their products in an individual with an allergic constitution.

In order to obtain accurate information as to the effect of sinus surgery upon patients with asthma it is necessary (1) to study the etiologic factors, that is, whether solely infection or infection associated with demonstrable skin-sensitizations, and (2) to analyze the type of sinus surgery as to whether it is complete or incomplete.

Two hundred cases of asthma with disease of the paranasal sinuses treated surgically were followed postoperatively for from six months to six years, with 69.5 per cent showing definite improvement. Of those who received complete surgical treatment 85 per cent were improved as contrasted with 54 per cent in the group who had only partial surgery. Immediate improvements should not be expected, and our results show that with increasing postoperative period of time the best results are obtained. We believe that this is due to the gradual elimination of infection in the cervical and bronchial lymphatic glands and the bronchial mucosa.

Surgical procedures on the paranasal sinuses cannot be expected to produce improvement of the asthmatic condition if extranasal infections such as those due to molds, spirochetes, and tubercle bacilli, as well as any associated allergies of the "skin-sensitive" type, are not taken into consideration. Autogenous vaccines are also important in the treatment of all of our cases.

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## FAMILY DOCTOR REBORN AS TRIPLETS

The family physician of a generation ago finds his counterpart in modern medicine in three men, Dr. R. S. Cunningham, dean of Albany Medical College, told the Visiting Nurse Association in Albany the other day.

"One hundred years ago the total knowledge in medicine was within the compass of a single mind," he said. "All the technical expression of medical knowledge could be acquired by a single individual and a practicing physician could serve his community with no other help than he derived from his friends."

"But times have changed. The tremendous increase in knowledge and the development of many special technical procedures have made it necessary for medicine to find new methods of expression, and this has resulted in the general practitioner being, like ancient Gaul, divided into three parts."

Dr. Cunningham told the nurses those three divisions that make up the relationship of the patient to the physician are diagnosis, treatment, and a comprehensive sympathetic understanding.

"Therefore, today we offer you in place of the family physician, three men: one trained to recognize disease, one trained in specialized therapy, and one trained in the problems of social adjustment of the individual. We still have the family physician, altered in number but not in service. Once he was one, now he is three."

## HOW TO STAGNATE IN MEDICINE

There are several rules which must be kept in mind, if we wish to deteriorate in medical skill and knowledge, says *Clinical Medicine and Surgery*.

The first rule: File your patient's records away and forget all about them. Never go over them after the day's work is done and try to pick out errors of omission or commission, never try to follow up patients to learn whether your diagnosis was correct and your treatment helped the patient. Best of all, keep only a few scribbled lines about each case, preferably without making any attempt at a diagnosis.

The second rule: Read medical books and magazines with an eye only for the "practical"—that which can be used at once. Skip over the physiology, pathology, and differential diagnosis so that you can concentrate on treatment. Read the summaries at the end of articles, only a sucker will dig through the article itself.

The third rule: Never take a chance on confirming your diagnosis by consultation with a specialist (unless, of course, an unreasonable patient insists on it and you can't snub the bouncer) or by necropsy. Thus you can cheerfully go ahead making the same mistakes over and over. Most people don't know the difference anyway.

By following these basic precepts and by avoiding postgraduate courses and medical meetings, you may be assured of a comparatively rapid, and certainly unlaborious, decadence.

# THE BEHAVIOR OF TUMORS IN TISSUE CULTURE AT TWENTY-FOUR HOURS

EDWIN J. GRACE, M.D., F.A.C.S., Brooklyn

IN REVIEWING the data that has accumulated since the first reports on the growth of human tumors in tissue culture by Loeb, Burrows, and later Carrell nearly thirty years ago, one is impressed by the meager help that has accrued to the clinician from these investigations. Numerous studies have been reported, all attempting to make available a permanent supply of tumor tissue for experimental study and comparison. In spite of this commendable effort, little has been done to use growth in tissue cultures as a means to explain the wide difference seen in the behavior of cancer clinically.

Early in our investigations we noted that various tumors exhibited differences of behavior within twenty-four hours after culturing. An effort was therefore made to ascertain whether or not such differences might be related to the grade of the malignancy of the tumor as seen clinically. If such were the case, a study of the phenomena underlying these differences might contribute to our knowledge of the biology of tumor cells, and the different types of behavior in tissue culture might have diagnostic value in the case of tumors difficult to classify by the usual methods.

In most cases the operation from which these specimens were taken occurred about 9:00 A.M., and the cultures were made during the early afternoon of the same day.\*

The medium used was as follows: one volume of chick embryo extract, one volume of a mixture of three parts of human blood serum (from any source), and one part of chicken blood plasma.

Twelve to fifteen explants were made from each tumor. In the majority of cases most of the explants exhibited a similar type of behavior (see Figs. 1, 2, 3a and b, and 4).

Thirty-seven tumors are reported. Fifteen others were cultured, but reports on them are excluded because of contamination or other adverse conditions. Although this number is larger than that involved in other studies, nevertheless conclusions must be regarded as tentative, since the types of tumors studied are

diverse and the number in any one grade is small.

The differences in behavior of the tumors exhibited under tissue culture conditions fall into three categories: (1) the degree to which they liquefy the medium, (2) the presence of wandering cells which are more or less rounded but have an irregular shape (probably leukocytes and macrophages), and (3) the presence of elongated cells which are fibroblasts.

The fibroblast-like cells that are present in the most active tumors make their appearance within a brief period that is not typical of ordinary fibroblasts of normal adult mammalian tissue, the latter usually have a latent period of at least twenty-four hours before they first make their appearance and then are just beginning their growth. In the tumors, however, these cells when present are abundant and have grown out from the explant. All these cells are probably not tumor cells but represent the defensive cellular mechanism found in the cancer bed.

The variations in behavior have been arbitrarily grouped into four classes as follows: grade I—no liquefaction of the medium and no visible cell activity (benign tumor), grade II—slight liquefaction and the presence of a few wandering cells (low grade or grade I), grade III—much liquefaction and the presence of many wandering cells (medium—grades II and III), and grade IV—much liquefaction and the presence of many wandering cells (as in grade III) and, in addition, fibroblasts (high—grade IV).

The major result is as follows: human tumors, after twenty-four-hour period under tissue culture conditions, if benign, show no activity with one exception, if malignant, they exhibit various degrees of activity, again with an exception, in general, the degree of activity is probably related to the degree of malignancy. This result is apparent from a study of the data of Fig. 5.

The two exceptions noted should not, however, be minimized. (1) Fibroid tumors of the uterus are known to be benign except for about 2 per cent of cases, yet of the eight cultured in this study, four exhibited no activity as is expected, but four others showed slight activity. (2) Metastatic tumors of the axillary gland (breast carcinomas) would be expected

\* Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 8, 1940.

From the Grace Clinic, Brooklyn.

\* The culturing was done in the biologic laboratories of Chambers by Miss Gladys Cameron at Washington Square College, New York University.



FIG 1

FIG 1 Picture of an explant of a benign tumor at the end of twenty-four hours in tissue culture. There is no evidence of growth



FIG 2

FIG 2 Picture of an explant from a low-grade malignant tumor at the end of twenty-four hours showing liquefaction of medium about the explant

to show extensive activity, yet three such tumors showed none at all

In active surgical practice it is absolutely apparent that carcinoma behaves in humans in many different ways, but on analysis the clinical picture bears a definite relation to the cellular makeup of the tumor, the reaction of the tissue in the cancer bed, and the anatomic position of the growth. The most vital of these is, of course, the cellular makeup, and it represents the biologic unit on which the whole cancer problem exists. Clinically, cancer is nothing more or less than the composite picture of this atypical cell behavior.

The cells in all neoplasms show a tendency to maintain a normal, adult, cell architecture (differentiated) or to show active cell growth not imitating the parent cell histology (undifferentiated), and within the confines of this cellular phenomena and the anatomic area involved rests the entire clinical picture of cancer.

In 1929, following the technic of Broders, I confirmed in a series of carcinoma of the breast the clinical importance of grading tumors and further demonstrated that the higher the grade of the tumor, the greater the tendency to metastasize, and the more remote the metastasis from the primary tumor, the higher the grade of the tumor, and, conversely, the lower the grade of the tumor, the less tendency to metastasize. These observa-

tions compelled me to try further for confirmatory evidence, and these studies resulted.

With these clinical facts in mind, it was the purpose of the study reported here to demonstrate from the primary tumor what fundamental biologic difference might be involved, to determine whether the cells that constitute malignant tumor could be grown in tissue culture, and whether the rate of growth in tissue culture would parallel the grade of malignancy.

It was apparent at the outset that the cellular activity seen in tissue culture was not the cellular makeup of the original tumor, and a review of many of the reports in the literature leads one to question whether some cellular elements from the cancer bed were not grown, rather than the cancer cells as we recognize them at present.

In discussing the cellular element in cancer from a clinical point of view, two interesting facts stand out—namely, that the more differentiated the cell, the less tendency there is for metastasis, and, conversely, the more undifferentiated the cells, the greater the tendency to metastasis. Clinically, this fact is significant as in cancer of the colon, the well-differentiated adenocarcinoma will kill by obstruction unless relieved surgically, while the high-grade, undifferentiated adenocarcinoma may not obstruct but will kill by metastasis. These fundamentals in biopathology of the



FIG 3a



FIG 3b

FIG 3a Picture of an explant from a high-grade tumor showing marked evidence of growth in tissue culture at the end of twenty-four hours. Growing cells are probably fibroblasts.

FIG 3b This picture shows a higher magnification of FIG 3a cells growing from periphery of explant in a high-grade malignant tumor in tissue culture at the end of twenty-four hours.

so-called cancer cells are not sufficiently appreciated by all clinicians. I feel that if all surgeons would give more consideration to the biopathology of cancer they would, when approaching the problem as technicians, be compelled to see the appalling limitations of their efforts.

It is generally true that although both types of cells may metastasize it is the undifferentiated cells that are seen most often in metastatic nodules.

In the reports in the literature on growing cancer there seems to be considerable discrepancy between the type of cellular growth seen proliferating from the cancer in tissue culture in twenty-four hours and not dissected from its cellular bed and the cells seen in the cancer specimen stained for routine diagnosis.

It is extremely difficult to define the cancer cell, but, if we use the criteria described by MacCarty as a cell "in which there is a marked alteration in the nuclear-neucleolar ratio which is a phenomena not seen in any normal cell," we must frankly state that in none of our tissue cultures were cells of this type observed. We were unable to duplicate in tissue culture at the end of twenty-four hours the general cellular pattern seen in the original tumor. We did demonstrate that the rate of growth in tissue culture roughly parallels the grade of the tumor, but the cellular appearance in twenty-four hours does not resemble the original tumor. A matter of considerable

## BENIGN AND MALIGNANT TUMORS GROWN IN TISSUE CULTURE

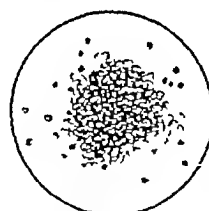
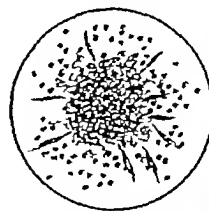
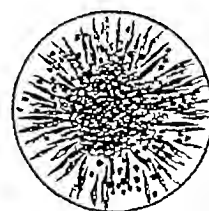
Benign  
14 CASESLow Grade  
9 CASESMedium Grade  
10 CASESHigh Grade  
4 CASES

FIG 4. Diagrammatic representation of benign and graded malignant tumors grown in tissue culture in twenty-four hours.

interest from a clinical point of view is that benign tumors do not show activity in tissue culture, but malignant tumors, irrespective of the grade, will show signs of growth in twenty-four hours. This is most significant, and this medium might be added to our diag-

TYPE OF TUMOR AND NUMBER CULTURED		MALIGNANT		
MALIGNANT TUMORS	BENIGN	MALIGNANT		
		Low Grade	Medium Grade	High Grade
Lymphosarcoma	2			2
Osteogenic sarcoma	2		1	1
Carcinoma cervix	3		2	1
Metastatic Tumor recth	2		2	
Cystic Teratoma ovary	1		1	
Myxosarcoma abdominal wall	1	1		
Carcinoma breast	9	1	4	4
Axillary Gland breast metastasis	3			
BENIGN TUMORS				
Fibroid uterus	8	4	4	
Fibroid-ovary	1	1		
Lipoma thigh	2	2		
Mastitis--breast	2	2		
Epulis-mouth	1	1		
TOTAL-37	14	9	10	4

FIG 5

nostic data as a reliable method of deciding between benign and malignant tumors which, with our present equipment, may be incorrectly interpreted, often with unfortunate consequences to the patient. Regardless of the qualifications of the surgeon and pathologist, there is occasionally a case in which it is impossible to decide between a benign and malignant tumor with our present equipment, and in this group this new procedure might throw light. The suggestion made in the present study that the degree of malignancy of a human tumor may be related to the degree of activity it exhibits in tissue culture can probably be verified to best advantage by fur-

ther study. If a large number of such tumors were cultured and their activity at twenty-four hours were related to the pathologic diagnosis as well as to the postoperative history of the patients, significant information might be secured. If it should be confirmed that there is a relation between the degree of malignancy of a tumor and the degree of its activity in tissue culture, this might well develop into a practical diagnostic and prognostic aid to the clinician when dealing with certain types of tumors now difficult to classify.\* A group of hospitals might maintain a tissue culture unit where samples of such tumors would be cultured as a matter of routine procedure, and within twenty-four hours the information thus secured would be available to add to that obtained from the usual modes of diagnosis.

. . .

I wish to acknowledge the courtesy of the Department of Biology, Washington Square College, New York University, for permitting me to conduct these experiments in their tissue culture laboratories.

\* In following the above plan the perfusion pump described by C. A. Lindbergh in an article entitled "An Apparatus for the Culture of Whole Organs" (*Journal of Experimental Medicine* September 1 1935) might prove a diagnostically helpful apparatus.

## BEFUDDLED LEGISLATION

A lot of befuddled legislation is being presented for passage in Congress these days and in our state legislatures, remarked Dr. Eben J. Carey, dean of medicine at Marquette University, in a recent address at St. Paul. All of it is based on the premises that the cost of medical care is too high in America and that medical care is inadequate.

I challenge both premises, he declared.

Americans are the healthiest people ever seen any time, anywhere. Their health depends upon healthy minds and souls as much as upon healthy bodies.

You cannot go out and buy five dollars' worth of health. And by the same token, you cannot purchase health by immense appropriations of money if, at the same time, you take away the dignity and rights of the human being.

## "SUFFER LITTLE CHILDREN"

The average couple seeking relief from sterility in the year 1920 had about a 20 per cent chance of accomplishing their desire if they were fortunately able to consult one of the half dozen physicians in this country who were at that time devoting particular attention to the subject. In the hands of other doctors, including eminent gynecologists and urologists, the likelihood of success was only half as great. Today there are many groups of expert workers whose percentage of cures ranges from 40 to 50. It would seem, remarked Meaker and Vose in the *J. A. M. A.*, that the profession has some right to congratulate itself on this striking improvement in the management of a problem which is vitally important in the lives of more than 2,000,000 American homes and consequently, in the aggregate, of no small importance to the social and economic welfare of the nation.

## THE RADIO HATH CHARMS

A healthy man must feel unhappy when he listens to the medical ballyhoo on the radio and realizes how easily, surely, and pleasantly he could be cured of many interesting ailments, if he only had them.

—*Midwaukee Medical Times*

## LUCKY, ONLY THREE

Doctor—"You say you found a letter in a woman's handwriting in my pocket this morning. I'm sure I don't know how it got there."

Wife—"I do! I gave it to you to mail three weeks ago!"

—*Midwaukee Medical Times*

# SUPPORTIVE THERAPY IN BRONCHIAL ASTHMA AND VASOMOTOR RHINITIS

JOSEPH S. STOVIN, M D, New York City

THE theoretic importance of protein desensitization has in recent years tended to overshadow the equally important consideration of correcting an underlying physiologic and biochemical imbalance so frequently manifest in the bronchial asthma patient. The desirability of broadening our concept of asthma therapy to include treatment of the "biochemical lesion" is emphasized in current researches of various investigators.

Witts<sup>1</sup> discusses the various problems of asthma therapy and concludes that "The detection of allergens is very different from the cure of asthma. The soil in which asthma develops is more important than the seed which induces the attacks, and future advances appear more likely to come through measures destined to modify the soil than through discovery of more and more allergens capable of exciting the paroxysms."

Careful inspection of the "soil in which asthma develops" is, of course, the concern of every physician who is confronted with the problems of this malady. However, as stated earlier, the study of the patient has too often been confined principally to the search for offending allergens both in the external and internal environments. Although in my experience desensitization, as well as attention to infective foci in the paranasal sinuses, has resulted in gratifying improvement in a fair percentage of patients, nevertheless one cannot escape the conviction that such procedures fail to bring the desired degree of relief in the average patient.

The Asthma Research Council,<sup>2</sup> after five years of investigation, conclude that the results of protein desensitization and vaccine therapy have not proved sufficiently successful. It was found that results obtained by general treatment without specific desensitization were at least as good as results of general treatment combined with specific desensitization and better than those of specific desensitization alone.

In harmony with the reports of Sangiorgi<sup>3</sup> and de Bersaques and Berat,<sup>4</sup> who noted disequilibrium and instability of the neurovegetative system in asthma, is the marked relief observed after stellectomy by Leriche and Fontaine<sup>5,6</sup> and after resection of the posterior pulmonary plexus by Reinhoff and

Gay.<sup>7</sup> Numerous other workers have likewise effected relief of asthmatic attacks by interruption of nervous pathways.

That the problems of asthma and vasomotor rhinitis have been studied in a great variety of other ways is encouraging evidence of a determination to search beyond the now obvious phenomena of sensitivities to certain environmental factors and to attempt to elucidate the underlying mechanism. Disordered biochemistry was found in nearly every asthma patient studied by Clarkson.<sup>8</sup> Although he does not go into the exact nature of the chemical disorders, his findings are of interest when viewed in the light of the close interrelationship between electrolyte balance, water metabolism, hormonal influences, and the activity of the autonomic nervous system.

Recent developments in the therapy of asthma and vasomotor rhinitis strongly suggest that the ailments may be, in part at least, manifestations of an imbalance in the body between the cations sodium and potassium. Stoesser and Cook<sup>9</sup> noted that a high intake of sodium chloride tends to precipitate asthmatic attacks and that the severity of attacks can be influenced by shifts in the sodium chloride content of the diet. In a later report these same workers<sup>10</sup> describe the successful use of a low sodium chloride diet combined with administration of pitressin and potassium chloride to reduce the frequency and severity of asthmatic paroxysms. They attribute the improvement largely to depletion of sodium chloride—pitressin, in spite of its antidiuretic action, causing an increased output of sodium chloride. Potassium chloride was administered coincidentally with the pitressin therapy and the reduced sodium chloride intake, and, although they apparently attach no significance to it, it seems probable that the potassium intake, as well as the sodium depletion, exerted an influence on the disordered chemistry.

With regard to vasomotor rhinitis, Kaplan<sup>11</sup> believes that in itself it "is not an allergic state, but is the result of faulty fluid and sodium balance. In this state abnormal permeability is often present and the patient may become sensitized to allergens which from time to time penetrate the permeable membranes." He obtained favorable results

in vasomotor rhinitis by depleting the sodium and increasing potassium and calcium in a dissociated form by the administration of acidifying agents. His capsule contained potassium chloride, 2 grains, which was given three times daily and increased to 3 or 4 capsules at each dose. It is very interesting to note that his favorable effects were achieved by small doses of potassium.

Rusk and Kenamore<sup>12</sup> treated urticaria with potassium chloride, finding that it acts like adrenalin in relieving symptoms. In an attempt to evaluate the relative efficacy of various salts of potassium, Bloom<sup>13</sup> confirmed the finding that a salt-free diet is beneficial in decreasing the severity of asthma and found that simultaneous administration of potassium iodide "practically eliminates severe asthmatic attacks." He states that the patients are not cured but that the beneficial effects obtained by the combination of the salt-free diet plus potassium iodide are greater than would be obtained by the use of either regimen alone.

Potassium iodide, which has long been used in the supportive therapy of bronchial asthma and also in vasomotor rhinitis, has, in my experience, produced marked effects in many patients. The relief noted in asthma has seemed to extend beyond the liquefying of mucus and the facilitating of expectoration. Bloom did not obtain improvement in a group of 10 patients with chronic persistent asthma after the use of potassium chloride, which was the only potassium salt other than the iodide reported in his preliminary paper as being tested in asthma. However, in hay fever, urticaria, food sensitivity, and other allergic manifestations, potassium chloride produced marked relief, and a combination of the acetate, bicarbonate, and citrate salts proved almost equally effective.

In view of the frequent failure of specific desensitization to achieve the desired results in asthma and vasomotor rhinitis (especially in patients manifesting symptoms of each) and in view of recently reported researches on the beneficial effects of undertaking an alteration of the existing electrolyte balance, I have for some time been treating these patients with the latter purpose in mind.

In addition to any local therapy which may be indicated, the regimen I have adopted comprises a diet that I call a "high-protein, low-sodium, antiretentional diet." It is similar to the diets used for edema in cardiovascular disease. If the patient is underweight or if it seems undesirable for him to lose weight, the calories are increased. Most

patients lose weight on the diet, but fortunately this is not unfavorable to most of them.

To the patients suffering from bronchial asthma with no associated vasomotor rhinitis, the potassium is given in the form of potassium iodide and potassium bicarbonate. To patients who have vasomotor rhinitis with little or no associated asthma, I give potassium in the form of potassium chloride.

Since the response to this therapeutic regimen depends upon close adherence to the dietary prescription (providing for a low sodium chloride intake), it is important that the patient be instructed to avoid all foods on the "forbidden" list. Attempts to secure the patient's cooperation, in spite of the notorious unpalatability of salt-free meals, are important. The available salt substitutes have not proved satisfactory in significantly improving the palatability of foods prepared without the use of sodium chloride. Tests are now being made with various substances which show promise of correcting this fault of the low-salt diet, and a later report will describe the results of this phase of the study in greater detail.

The following cases are illustrative of the management of, and the results obtained by, the use of potassium and regulation of the diet in asthma and vasomotor rhinitis.

### Case Reports

*Case 1*—A woman, aged 57, weight 180 pounds, had bronchial asthma for thirteen years. Relief was obtained only by self-administration of large amounts of adrenalin. She was placed on the high-protein, low-sodium, antiretention diet and was given potassium iodide (3 grains) and potassium bicarbonate (4 grains) every two hours. During the first month she lost 10 pounds. Her attacks were lessened in severity. She still required adrenalin but in much smaller amounts. At the end of three months there was a marked improvement, and she was kept on the same regimen indefinitely.

*Case 2*—A woman, aged 35, with a strong family history of allergy, had vasomotor rhinitis as far back as she can remember. She had several sinus operations with no improvement. Recently she had had mild asthmatic attacks. She reacted positively to timothy and for the past few years has received desensitization injections with good results. She was given potassium iodide (3 grains) and potassium bicarbonate (4 grains) every four hours. During the hay-fever season this dose was replaced by potassium chloride (10 grains) every four hours. The asthma disappeared entirely. She was entirely free of hay-fever symptoms, but this may have been due to the successful desensitization as well as to the potassium chloride.

**Case 3**—A man, aged 35, had a history of asthma for many years. During the past five years he had several sinus operations, each followed by slight relief from asthma. He obtained relief from epinephrine or ephedrine. Removing sodium from his diet and giving him potassium iodide (3 grains) and potassium bicarbonate (4 grains) every four hours resulted in a marked improvement. At the end of a month the cough and wheeze were still present but only mildly.

**Case 4**—A woman, aged 29, had asthma for many years. A pan-sinus operation several months before gave no improvement. When she was placed on the diet and given potassium iodide (3 grains) and potassium bicarbonate (4 grains) at four-hour intervals, there was a marked improvement. The cough became looser and more productive at first. At the end of one month it was greatly lessened. She lost 5 pounds during that period.

**Case 5**—A man, aged 38, had a positive family history and had asthma and vasomotor rhinitis for many years. He was placed on the diet and given potassium iodide (3 grains) and potassium bicarbonate (4 grains) every two hours. The paroxysms became less in frequency and severity and the sputum more liquid. The nasal symptoms were unchanged, but later, on changing to potassium chloride (10 grains) every four hours, there was a noticeable improvement, the membranes becoming drier and deeper red.

**Case 6**—A woman, aged 35, had a strongly positive family history of asthma and hay fever. All skin tests were of no avail, and she was not positive to any of the pollens. She had vasomotor rhinitis for many years and recently had acquired asthma. She was placed on the diet and was given potassium iodide (3 grains) and potassium chloride (4 grains) at two-hour intervals. After several weeks her wheezy, nonproductive cough became productive and finally abated. Her nasal symptoms did not improve until she was given potassium chloride (10 grains) every four hours.

### Comment

The comparative efficacy of this regimen, as contrasted with the continued and often permanent use of epinephrine and epinephrine-like drugs, seems deserving of brief discussion. The initial efficacy of epinephrine in allaying asthmatic paroxysms is often dramatic, but with continued use many patients develop an epinephrine "fastness," after which its effectiveness progressively diminishes, necessitating the use of larger and larger amounts to produce relief. This in itself is an indictment of the practice of encouraging self-administration of epinephrine by patients. In addition, epinephrine should be more widely recognized as a dangerous drug which should custo-

marily be employed only under medical supervision.

A possible explanation for the epinephrine "fastness" which develops after prolonged use of the drug is suggested by the observation of Rusk and Kenamore<sup>12</sup> that "effects attributed to adrenalin are actually effects produced by potassium migration which adrenalin causes." It seems logical then that after continued use of the drug the electrolyte balance may be sufficiently upset to interfere with the potassium migration, the customary dose of epinephrine then fails in its effectiveness.

In marked contrast to the diminishing effectiveness of epinephrine is the sustained and often increasing effectiveness of the supportive therapy—potassium administration and sodium chloride restriction—described above. The amount of potassium salts administered daily was purposely low in the belief that a more lasting improvement could be achieved by gradual correction of the underlying biochemical and neurovegetative imbalance than by an attempt to correct abruptly a condition that had presumably been developing over a period of years or months. Criteria for determining in advance the dosage that will be expected to produce optimal results in individual cases have not yet been established to my satisfaction. These factors are still being studied and will be reported later.

### Conclusions

The use of a diet rich in protein and acid ash and low in sodium chloride, combined with the administration of potassium in the form of potassium iodide and potassium bicarbonate, has proved effective as supportive therapy in the treatment of bronchial asthma. A similar diet combined with the administration of the chloride salt of potassium has given excellent results in the general treatment of vasomotor rhinitis with no, or only slight, associated asthma.

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## EXPANDING USE OF SULFANILAMIDE COMPOUNDS

The expanding usefulness of sulfanilamide and its derivatives, sulfapyridine and sulfathiazole, is revealed in twelve articles in the January 25 issue of the *Journal of the American Medical Association*, dealing with the three drugs. The same issue also carries an announcement by the Association's Council on Pharmacy and Chemistry of the acceptance of sulfathiazole for inclusion in New and Nonofficial Remedies and a report on an analysis of the drug.

Of particular importance is a paper which reports that sulfapyridine seems to be more applicable to the comprehensive treatment needs of gonorrhea than does sulfanilamide and another paper in which it is pointed out that the various sulfonamide drugs have produced encouraging results in the treatment of subacute bacterial endocarditis. This condition, involving inflammation of the membrane lining of the heart, until recently was considered to be generally fatal, and all methods of treatment had been adjudged ineffective.

A hopeful outlook for another condition involving the heart is reported in another paper, wherein it is stated that infections of the pericardium may be susceptible to treatment with sulfonamide compounds.

Still further evidence of the value of sulfanilamide in the treatment of actinomycosis is reported in another paper. This condition is a chronic infectious fungous disease of cattle, sometimes transmitted to man and characterized by the formation of lumpy tumors on the jaws and tongue. The fungus may develop in the viscera, bone, and skin, as well as in the mouth and jaws.

Physically induced fever enhances the value of these compounds in the treatment of subacute bacterial endocarditis.

In infancy and childhood, Drs Stewart C Wagoner and William F Hunting, Cincinnati, report that "sulfathiazole is as effective as sulfapyridine in the treatment of pneumonia."

Dr Charles K Friedberg, New York City, in a paper discussing sulfapyridine treatment in lobar pneumonia associated with leukopenia, points out that the presence of a low, white blood cell count should not contraindicate the use of sulfapyridine. He says that although it is known that sulfapyridine itself is capable of bringing about leukopenia the latter condition also may be associated with pneumonia and that when this is true the mortality rate is unusually high. He says that the danger of sulfapyridine leukopenia is relatively slight and that because of the effectiveness of the drug in the treatment of pneumonia its use is particularly indicated in severe cases of the latter disease.

In a discussion of the effective use of sulfanilamide in the treatment of actinomycosis, Drs Leonard Dobson, Emile Holman, and Windsor Cutting, San Francisco, report 3 cases, 1 involving infection of the jaw, 1 of the chest, and 1 of the abdomen. All of them were cured and the administration of sulfanilamide seemed to be the

deciding treatment agent. Their treatment of the cases also included the use of x-rays.

As to gonococcal infections, Drs. C J Van Slyke, R. R. Wolcott, and J F Mahoney, Staten Island, New York, report the results of their investigations of sulfapyridine in the treatment of such infections and compare the adaptability of sulfanilamide and sulfapyridine to the treatment needs of the disease. As a result of a study of 300 cases they say they prefer sulfapyridine. The cure rate, they report, approached 85 per cent for patients who had not received previous chemical treatment and 70 per cent for those who had failed to benefit by earlier sulfanilamide treatment.

Dr Morris H Nathanson, Los Angeles, reports that as the result of a study it was found that sulfanilamide and sulfathiazole diffuse into the pericardial sac. Because of this, he says that since infection of the pericardium may be due to organisms such as the pneumococcus, streptococcus, and staphylococcus, which are susceptible to the sulfonamide compounds, these drugs should be indicated in pericardial inflammations due to these organisms.

In a discussion of the present status of the treatment of subacute bacterial endocarditis, Drs S S Lichtman and William Bierman, New York City, state that among 200 cases of subacute bacterial endocarditis due to *Streptococcus viridans* and nonhemolyticus, collected from the literature and the records of the Mount Sinai Hospital, in which the sulfonamide drugs were administered, recovery occurred in 12, an incidence of 6.0 per cent recovery. Among 43 patients treated with a combination of one of the sulfonamide compounds and heparin 5 recovered, an incidence of 11.5 per cent recovery. Among 24 patients treated with one of the sulfonamide compounds combined with physically induced fever, 4 recovered, an incidence of 16.0 per cent recovery.

Drs Bierman and George Baehr, New York City, report the apparent recovery of 2 patients with subacute bacterial endocarditis by treatment with sulfanilamide and artificially induced fever.

Drs George B Craddock and Russel V Bowlers, Richmond, Virginia, report the effective use of sulfapyridine in the treatment of a recurrent case of meningitis (inflammation of the membranes enveloping the brain and spinal cord) occurring four times within a year in the same patient. "As far as we have been able to determine," they say, "there have been no cases of recurrent pneumococcal meningitis reported, this is probably due to the high mortality of this disease before the sulfapyridine era. Previous to the use of sulfapyridine, nearly all patients died before they could recover and suffer recurrences."

In another report Drs Joseph F Sadusk, Jr, and Aage E Nielsen, New Haven, Connecticut, report the recovery of a patient from the highly fatal meningitis due to *Staphylococcus aureus* following the administration of sulfathiazole.

## COMMON GLAUCOMA OPERATIONS

### Analysis Based on Histologic Findings

T L TERRY, M D , Boston

EACH operation designed to relieve glaucoma can affect the eye in more than one way. Success may depend on some subsidiary, perhaps unobserved effect. For example, every eye surgeon sees instances of reduced intraocular pressure following operations designed to establish artificial drainage even when there is no evidence that filtration occurs. In Table 1 an attempt is made to evaluate the full possible effect on the eye of various operations. Because of differences in opinion concerning the exact effect of many operations, one would expect considerable disagreement on the evaluations. Even with adjustment of the table to satisfy each observer, it is obvious that a glaucoma, relievable by any operation that would break the vicious cycle, would respond to any one of the many operations that allow aqueous to escape.

Paracentesis is usually of temporary value. Occasionally a filtering channel is obtained accidentally, in which case this operation is as permanently successful as an Elliot trephine. A paracentesis is valuable especially in association with active ureitis, since it is desirable to avoid any more extensive surgery in the face of inflammation. It is interesting to note that prolapse of a small knuckle of iris into the wound—which can occur—tends to produce a

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From the Harvard Medical School and the Massachusetts Eye and Ear Infirmary

recurrence of the glaucoma from postoperative synechia (Fig 1)

Little need be said concerning the curative effect of iridotomy in iris bombée if performed before anterior peripheral synechia has formed

Just how iridectomy is of value in acute glaucoma is not obvious. Instances of acute glaucoma cured by intensive use of miotics or by paracentesis alone suggest that the iridectomy is of value by emptying the anterior chamber and breaking a vicious cycle. Few iridectomies are really basilar, since  $\frac{1}{2}$  mm or more of iris is usually left behind. If the angle is open, one may safely insert a keratome into the anterior chamber at the root of the iris or make a section into the depth of the angle with a cataract knife. If an anterior peripheral synechia of any appreciable width is present, however, in inserting a keratome for a true basilar iridectomy one cannot avoid penetration of the posterior chamber. This penetration often involves injury to the lens, especially when a keratome is used. If the iris is normal at the time of the iridectomy, the iris stroma shows no tendency to heal, but permanent sealing of the cut blood vessels does occur. Following uveitis or accompanying long-standing glaucoma, the iris becomes fibrosed. Holes made in a fibrosed iris tend to close. This tendency accounts for closing of iridotomies in some instances. The cut edge of the iris may become adherent to the tissues at the site of the scleral or corneal wound (Fig. 2).

TABLE 1 INDICATIONS OF POSSIBLE EFFECTS OF  
VARIOUS OPERATIONS TO RELIEVE GLAUCOMA

[illegible]

FIG 1 Prolapse of small portion of int, anterior border layer, and stroma into paracentesis wound



FIG 2 Anterior synechia formed by adherence of cut edge of iris to posterior surface of corneal wound following iridectomy



FIG 3 Posterior sclerotomy Wound made by diathermy Note that wound has truncated cone shape Retina destroyed farther from wound than choroid Vitreous present in wound

Posterior sclerotomy, of value where other measures fail or are impossible, can be used not only to temporize or prepare for a filtering operation where there is no anterior chamber but also to give almost immediate comfort in instances of hopeless general illness associated with congestive glaucoma. When no local anesthesia is effective and no general anesthesia can be given, this operation can be done with a minimum of pain. If one desires to obtain a filtration for some period of time through the sclerotomy wound, it is wise to make the opening with diathermy (Fig 3). The incision can be made behind the ora serrata without fear of postoperative separation of the retina, since the diathermy also closes the edges of the hole made in the retina. The opening through the sclera can be made with a trephine if desirable. If the entire operation is done with a cutting instrument, it is preferable to open the eye through the pars plana of the ciliary body to avoid puncturing the retina. It must be remembered that the flow of fluid through the vitreous following a posterior sclerotomy causes the vitreous to liquefy.<sup>1</sup>

With opinion based on the present understanding of pathologic principles, it appears that a Barkan<sup>2</sup> goniotomy would tend to give only temporary drainage, since any incision from the anterior chamber into Schlemm's canal through sclerosed iris angle would tend to close. This theory depends on the assumption that there is a sclerosis of the iris angle meshwork, a condition found in instances of early glaucoma especially in association with exfoliation of the lens capsule (Fig 4). However, only longer experience with this operation and histologic study of eyes subjected to the operation can demonstrate the ultimate results.

In glaucoma caused by a markedly intumescent lens or by a lens dislocated into the anterior chamber, removal of the lens is the operation of choice, but in each instance every effort should be made to reduce the pressure to

normal before extracting the lens. If a patient with glaucoma has a cataract, it is preferable to remove the cataract first, providing the pressure can be brought down temporarily. Often no other operation is needed. If the operation to relieve glaucoma is done first, the corneal section for cataract extraction must be made obliquely or intracorneally to avoid destruction of the filtering bleb.

The only pathologic specimen of cyclodialysis available at the Massachusetts Eye and Ear Infirmary shows the lens tilted and pushed away from the region of operation (Fig 5). Elasticity and muscle tonus of the ciliary body and iris appear to be the only force, constantly present, that tends to keep a cyclodialysis wound open. Were this force sufficient, Troncoso<sup>3</sup> would have had no incentive to design the operation in which magnesium foil is introduced into the wound to keep the tract open.

All successful filtering operations, opening a channel to drain aqueous into subconjunctival and episcleral tissue, appear to give relatively similar results except in iris inclusion operations where remains of pars iridis retinae are always present although the iris stroma disappears. Operative wounds may close through scar tissue growth from adjacent structures. Fibrous tissue may arise from the iris, especially if a newly formed, vascularized membrane is present on the iris surface (Fig 6).

This condition is found in hemorrhagic glaucoma and glaucoma secondary to malignant melanoma of the uvea, secondary to long-standing separated retina, and rarely secondary to retinoblastoma. Filtration wounds are at times blocked by prolapse of iris, part of ciliary process,<sup>4</sup> hyperplasia of ciliary process, lens (Fig 7), epithelialization of the anterior chamber, vitreous, and blood clot. When blockage occurs, a subconjunctival decapitation of the bleb in some instances may turn a failure into a success. These operative wounds are areas of weakened resistance



FIG 4. Iris angle in capsular glaucoma. Note sclerosis of iris angle meshwork, absence of Schlemm's canal, and exfoliated material on surface of angle meshwork.

through which toxins and bacteria themselves may gain entrance to the eye from purulent conjunctivitis.

Based on the theory that sclerosis of vortex veins is responsible for certain types of glaucoma, Sondermann<sup>5</sup> devised a sclerotomy over the ciliary body, performed by means of a trephine, to make an opening through which blood vessels from the ciliary body can anastomose with episcleral vessels. In common with cyclodialysis and probably with goniotomy, it may traumatize the ciliary body sufficiently to produce temporary cessation of function. The kidneys at times cease to function after a sudden decompression of the bladder following prolonged retention of urine at a high pressure incident to enlarged prostate. Any decompression operation on the glau-

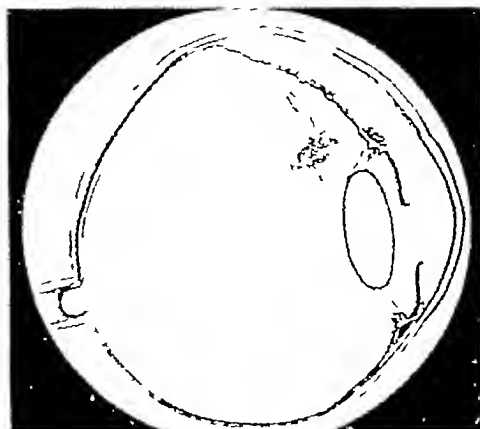


FIG 5. Composite diagram from various sections of eye on which cyclodialysis had been done. Disinsertion of the retina and vitreous hemorrhage present. Note position of lens. It has been tilted backward and pushed away from region of operation.

comatous eye may have a similar result.

Operations designed to retard the formation of aqueous consist in destructive injury to the ciliary body. Such an injury can be accomplished by means of diathermy, either by use of Walker points or by the flat electrodes of Weve. Until more knowledge of the results is available, no definite conclusions are possible.

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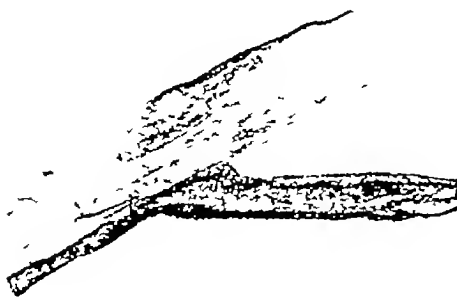


FIG 6

FIG 6. Newly formed, vascularized membrane on iris in hemorrhagic glaucoma. The full amount of newly formed tissue is obvious in this section because the eye is heavily pigmented and the anterior border layer stands out plainly.



FIG 7

FIG 7. (Photograph by F H Verhoeff, M D) Prolapse of small portion of crystalline lens into trephine wound.

# EARLY SIGNS OF SERIOUS GYNECOLOGIC LESIONS

JAMES RAGLAN MILLER, M D , Hartford, Connecticut

MY TOPIC implies that the specialist should point out in a frankly critical manner those mistakes that are commonly made early in the course of disease—those errors of omission and commission which delay or make difficult the application of therapy that would otherwise be curative. More can be learned by studying our failures than by boasting of our successes. I shall consider a few examples that illustrate particular points. These are chosen from cases of prolapse of the uterus, pelvic infection, and cancer which stress some of the methods of early recognition.

We speak of general practitioners and specialists as if sharply drawn lines could departmentalize the patient. Dangers lie in that kind of thinking, for frequently two or more systems of the body are affected by a single cause and we have learned from bitter experience that obvious and adequate explanations of symptoms in one system may distract our attention from early and serious lesions elsewhere.

Any specialist who attempts to criticize the general practitioner should do so with a profound sense of humility, appreciating that it is more difficult to diagnose early lesions than full-blown disease. The criticism I have in mind, however, is not that the first examining physician fails to recognize early and rare lesions but that he fails to make use of his five senses and to apply to the problem of diagnosis the clinical resources at the disposal of every well-trained medical graduate. I consider it most dangerous to make light of a patient's story without adequate examination, for her symptoms may be the earliest warning signals of serious disease. I shall later give examples to illustrate these criticisms.

I realize that all of this must be familiar to you, and I feel you may be disappointed that I cannot bring to you new methods and formulas by which these mistakes can be avoided. I may hope, however, that frank discussion of errors that I have made as well as others that I have observed may help to avoid falling into the same difficulty in the future. Most of all I should hope to encourage the development of a diagnostic habit

that takes nothing for granted even when the doctor is tired and the patient is a chronic complainer.

Consultations should be recommended as needed, but consideration must be given to the patient's financial resources and to the relative importance in her life of the given lesion. There are certain situations with which you are familiar where it is much more humane to avoid any serious effort at making an accurate diagnosis and to suppress for the time being your scientific curiosity. I mention this merely to be sure that in our scientific discussions we do not lose a sense of proportion and forget that we are dealing with human beings. Lest our sympathies unduly influence our judgment, let us be careful not to deny any patient the help that today can be given safely simply because we have in mind the failures and the high mortalities of an earlier period.

Many a prolapse of the uterus comes to the specialist for operation in a condition that makes him wish that he had seen the patient earlier. Some of these instances are due to the patient's own neglect, but I recall cases of prolapse with cystocele which have been carried on for years with inadequate local support, suffering repeated attacks of so-called bladder trouble. It appears that most medical men think of prolapse of the uterus in terms of backache and of mechanical inconvenience to the patient. I would suggest that you consider, more seriously than has been done in the past, the effect on the urinary system of continued distortion of the trigon of the bladder and of the ureters caused by prolapse and cystocele. Adequate repair should not be postponed until the patient presents herself as a poor risk because of age and repeated attacks of urinary infection. As a recent example I cite Mrs. E., aged 51, who was referred by her physician for repair of a second-degree prolapse with moderate eversion of the vagina and cystocele. She was a hard-working housewife, six months in the menopause, and had recently had a "cold." Her urinary tract showed marked dilatation and a proteus infection which explained her "cold." Repair by vaginal hysterectomy and continued treatment of her urinary infection have completely relieved her

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These kidney tract infections should be recognized early, for it is not a difficult thing to get a catheterized specimen under sterile precautions and have a culture made. No gynecologist will do elective repair work in the face of an active urinary tract infection, and family physicians who refer patients for operative treatment at some distance can avoid embarrassment and save the patient much time and money by recognizing and treating the complicating urinary tract infection.

A common mistake often seen is the application of caustic or cauterizing agents to the cervix before the patient is sent for consultation or for surgery. We should remember that any caustic agent causes a low-grade infection in the presence of which elective operation should not be undertaken. Such a cauterization should postpone operation for at least a month. This may be slightly over-conservative, but the patient who has elective surgery performed has a right to expect that the most ideal situation will prevail.

Before leaving this subject may I refer to strictures of the female urethra. While this is not an early sign of serious gynecologic disease, it is an often missed diagnosis. It is easily made and easily treated, and one has but to be alert to the possibility. In the treatment of strictures of the female urethra I strongly recommend the use of male urethral sounds.

The importance of conservatism in the treatment of acute pelvic infections has been generally accepted. Few gynecologists or general surgeons will open the abdomen if they are reasonably certain that an acute infection arises from the pelvic organs. Granted that appendicitis can be ruled out, conservative methods are the rule, particularly at the onset of infection in the handling of which the newer sulfanilamide preparations have been found so effective. These are particularly useful in infections with the streptococcus, gonococcus, colon, and Welch bacillus—organisms that produce the great majority of pelvic infections. From what I can observe there seems to be little need to urge the general practitioner to make use of these drugs, rather one should advise caution in using them thoughtlessly for any condition showing febrile reaction. The one particular point I wish to emphasize in the field of pelvic infections is the danger of vigorous cauterizing of the cervix in the presence of acute infection. Many instances of serious and even fatal infections have been recorded, fighting

up fatal infections by an overvigorous local treatment. Such a case is the following.

Mrs. M. was a manicurist who had had 1 child fifteen years previously. Ten years before admission the right tube and ovary had been removed. In the face of a positive urethral smear for gonorrhea, which her physician had himself taken one week previously, her cervix was cauterized. Within three weeks she died on our wards from a purulent peritonitis salpingo-oophoritis arising from a broad ligament abscess, which at autopsy was clearly an extension of the necrotic and infected area of the cauterized cervix.

This physician was a graduate of a grade A medical school and he had not learned the necessity of avoiding local treatments in the face of acute infection.

May I call to your attention the great importance of an accurate history of the beginnings of pelvic infections. It is characteristic that gonorrheal infection ascends to the peritoneal cavity at, or immediately following, a menstrual period, whereas the gram-positive organisms and colon bacillus infections are more apt to follow an interrupted pregnancy. The physician who is closest to the patient at the time of onset can add greatly to the knowledge of the case by furnishing all significant data of the circumstances surrounding the onset of symptoms.

In this country syphilis is undoubtedly diminishing, and there are, no doubt, few physicians who have ever seen a primary chancre in the woman. I call to your attention an excellent monograph on primary syphilis in the woman by T. A. Davies, of London, who showed that 45 per cent of 584 primary genital chancres in women were internally situated. In fact 44 per cent of the entire series were located on the cervix. Now these chancres must be looked at to be recognized, and they do not remain there indefinitely. Consequently the physician who discovers a fresh case of syphilis in one of his male patients should promptly inspect every female contact. If he does so he may be rewarded by discovering an early case. I can think of no greater satisfaction that I have had in practice than of making one such discovery. I was able to prove the diagnosis by dark-field examination and to have the patient under adequate treatment before systemic infection, as shown by a positive Wassermann, had taken place. The Biblical admonition in this instance is "Seek and ye shall find."

We can perhaps be of most service in discussing our general topic by spending most

of our time on the early diagnosis of cancer. Unlike cancer in the genital tract of the man, female genital cancers are predominantly accessible. It is to be noted that one-half of the predominantly accessible female cancers are those in the genital tract, constituting 21 per cent of all cancers in women. When we consider these facts the gynecologist often feels that there is little excuse for the great delay in making the diagnosis that he unfortunately observes.

In Willmantic, Connecticut, a realistic group of physicians, after surveying their hospital cancer material, made these observations. In gynecologic cancer the time elapsing between the first symptoms and the first visit to a physician averaged three months, the time elapsing between the first visit to the physician and hospital admission averaged two and one-half months. In the group where there was no delay 66 per cent were "operable", in the delayed group only 30 per cent were "operable", and they noted, furthermore, that for the whole series 31 per cent had been given poor medical advice. I am convinced that physicians generally do not appreciate the need for speed in placing cancer patients under treatment. It has helped me to visualize this need by recalling the figures, worked out in Boston, that the prospect of five-year arrests in cancer of the cervix diminishes on the average about 4 per cent each week that the patient is delayed in getting under treatment.

The early symptoms of cancer of cervix and fundus are well known to you all and can be summarized in two words—atypical bleeding. This bleeding may occur without warning and without exertion, or it may occur following coitus or douching. All such instances of bleeding are by no means cancer, but the physician must satisfy himself as to the origin of such bleeding. The public is learning this lesson rapidly and is bringing the problem of early diagnosis, of excluding the cancer diagnosis in particular, to the physician, and he is expected to take the matter seriously.

I cannot proceed further without paying my respects to the most dangerous practice of hormone treatment in the cancer age without first proving the absence of cancer. I think the hypodermic syringe filled with the latest hormones is one of the most deadly weapons that has been placed in the hands of the medical profession. This quackery, I am sorry to say, is thoughtlessly practiced by members of our profession and is undoubtedly

responsible for the delay in the diagnosis of many cancers of the uterus. Let there be no misunderstanding on this point. I would not stand in the way of any legitimate experiments or treatment with hormones once the physician has assured himself by curettage or biopsy that he is not dealing with malignancy. After that I can trust the patient's limited resources to exert a restraining influence upon the scientific enthusiasm of the experimental hormonologist.

A recent address by Dr. N. T. Root, of West Hartford, late president of the Hartford County Medical Association, summarizes the general practitioner's point of view concerning the cancer problem. To the general practitioner cancer is a small part of his work. Among 2,350 individuals seen by him in two years, only 36 were recognized as having cancer, though four others refused investigation of suspicious symptoms. The comparative rarity makes one forget the likelihood of occurrence. Symptoms may be adequately explained by some other diagnosis, or the early lesions may be entirely masked by an acute and temporarily more serious illness. Then, too, the general practitioner is close to his patient, and, while he is theoretically best able to detect early symptoms, it is more difficult for him to have a scientific attitude toward his old friends than it is toward strangers. It is particularly hard for him to suspect real illness in the chronic complainer. Dr. Root felt that many general practitioners are unnecessarily discouraged once a diagnosis of cancer is made, feeling that the prognosis is hopeless, though in the light of present knowledge, and particularly in the case of gynecologic cancers, this attitude is quite unjustified. I quote his final paragraph verbatim: "It is a particularly opportune time for the general practitioner to take stock of his position in this important phase of his work, important not so much because of the number of cases that he sees, but because, as is so seldom true, his decision here is actually one on which life or death depends. He may make many mistakes in diagnosis or treatment in the course of a day on the average case, and his patient will get well in spite of him, but in this disease if he slips up, the fatal outcome may be justly attributed to him. At a time when the public is questioning the organization of medical men and the efficiency of the service which we are rendering, and when we are offering as the alternative to socialized medicine the reinstatement of the general practitioner as a keystone of the

practice of medicine, we must face the question as to whether or not, in this field, we are really giving the service the public and the rest of the profession have a right to demand."

Cancer of the vulva is not frequently seen. Its treatment is generally considered to be surgical with radical removal of the vulva and adjacent lymph glands. Leukoplakia and kraurosis are definitely considered precancerous lesions though they may turn out to be amenable to hormonal or vitamin treatment. For the present at least, our attitude should be to regard them with the utmost suspicion, and some experienced gynecologist should shoulder the responsibility of treatment. A simple removal of these precancerous lesions is easily done without shock, and certainly no case of leukoplakia of the vulva or of kraurosis should go more than three months between follow-up examinations.

One of the discouraging cancers in the woman is that of the ovary. We have learned, however, that many ovarian tumors, formerly called malignant, in reality are benign. These tumors cannot be distinguished clinically in the early stages when if they are malignant cure may be effected. We must rely on detecting enlargements of the ovary by repeated pelvic examinations in the cancer age. The public is coming to us in greater numbers than ever before for annual physical examinations, and every practitioner and gynecologist has many women who, because of a mild cancer phobia, come for regular pelvic examination. It is common practice for the gynecologist to record his objective findings, a habit that I commend strongly to the general practitioner if he does not do it already. It is desirable at times to appreciate that an enlarged ovary is actually growing according to the objective records. Cancer of the ovary is often slow in growing and should be more often cured. We must even be prepared to operate unnecessarily to catch the occasional early malignant tumor, for, as Schiller has pointed out, it appears likely that ovarian carcinoma does not start as a small group of malignant cells but rather occurs as a malignant transformation of neoplasm which hitherto had been benign. This concept indicates the need of prophylactic removal of ovarian growths in much the same manner that the surgeon must prophylactically remove adenomas of the thyroid.

Gynecologists have been much interested in the Schiller iodine test and in the Kolposcope for the diagnosis of early cancer of the cervix and especially for the differentiation of cancer from other lesions. Every general

practitioner should be reassured, however, by the observation commonly reported now by gynecologists of the widest experience, that these methods have not added much to the ability to detect early cancer. It is certain that early cancers can be observed by any properly bespectacled physician, provided he will bring to bear on the lesion adequate illumination and a consciousness of cancer possibilities. The iodine solution is an excellent disinfectant to use if he wishes to take a biopsy, and it will often call his attention to the fact that the cancer has extended beyond the area that naked-eye observation would indicate. The Kolposcope is of help only to the specialist who has wide experience in its use.

The following case histories will serve to illustrate matters that seem to me important.

### Case Reports

L. M., aged 66, had consulted a general surgeon over one year previously for vaginal bleeding. He had performed a biopsy of the cervix, which was reported as chronic cervicitis, and she was reassured. After several months with continued bleeding she placed herself under the care of two general practitioners who treated her medically without success. The patient herself sought consultation of a specialist. Adenocarcinoma of the fundus was found and successfully treated with radium and panhysterectomy.

*Comment*—In this instance the surgeon went through the motions of ruling out cancer of the cervix but completely missed the cancer of the fundus. Not only he but two other physicians relied on the negative biopsy. The best pathologist cannot make a correct diagnosis unless significant tissue is submitted for the examination.

E. B., aged 43, in April had consulted a gynecologist who had advised hysterectomy because of a fibroid tumor. The advice was not taken, but under the encouragement of a general practitioner who acquiesced to nonoperative treatment the patient received x-ray therapy without improvement. In October, laparotomy disclosed an adenocarcinoma of the ovary of the pseudopsammoma variety, complete removal of which was impossible. She died fourteen months later.

*Comment*—Whenever a patient is encouraged to follow a course different from that advised by the specialist, the general practitioner must be prepared to shoulder the burden of the consequences. In this case no conference was held by her physician and her specialist, the patient being allowed to choose between conflicting opinions.

G. R., aged 48, had had regular periods until nine years previously, since that time they have been totally irregular. She was first given the "benefit" of hormone treatment by her general practitioner. When this failed she re-

sorted to osteopathy. Becoming discontented, she presented herself at the hospital with a Stage 2 carcinoma of the cervix.

E W, aged 45, was sent in promptly by her general practitioner with a history of three months intermenstrual bleeding. A prolapsed submucous fibroid, the size of a hen's egg, was excised. Death resulted from sepsis with pelvic cellulitis.

*Comment*—This case is mentioned to illustrate the danger of submucous fibroids that become strangulated and give rise to a virulent interstitial infection. Such instances are not infrequently seen in the menopause, and they should be handled promptly and with skill.

M B, aged 46, had never been pregnant. This patient came to her physician because of pain in the neck and shoulder. He gave her a complete examination and found a small area of leukoplakia on the cervix. The suspicious point about this leukoplakia was that it was adjacent to the external os. This physician showed fine judgment in referring her for diagnosis and treatment without applying any local cauterizing agent to the lesion. Biopsy showed an early carcinoma, and radium and x-ray treatment were given with every prospect of cure.

C A., aged 41, had never been pregnant. She was referred by her local physician because he found some polypoid masses in the cervix. An early carcinoma of the cervix of the transitional cell type was found on biopsy. Radium and x-ray treatment were given with every chance of permanent cure.

*Comment*—This case is presented to emphasize the fact that not a few carcinomas of the cervix develop within the cervical canal and that particularly in nulliparous women they may extend their growth upward and not appear at the portio until late in the disease. Several such instances have been observed in the last two years in the Hartford Hospital, and unfortunately

the diagnosis was missed on a number of occasions because the physician was not alive to this very possibility.

McM, aged 47, para I, has been inspected once a year because of a cancer phobia. One year previously the cervix had been clean except for a small erosion which had been treated with silver nitrate. No history of irregular bleeding or discharge had complicated her menopause. Inspection of the cervix, however, showed at this time an area of patchy leukoplakia adjacent to the external os. Schiller's test showed no iodine stain in this area, and a biopsy was taken which showed an early epidermoid carcinoma of the cervix. This lesion was thoroughly treated by radium and x-ray, and there is every prospect of a permanent cure.

### Conclusions

1 It should be the aim of the general practitioner who first sees the patients to recognize early lesions that are suspected of being serious gynecologic disease, but he should apply no treatment that would seriously interfere with making a positive diagnosis.

2 No unusual skill or knowledge is called for in the early recognition of cancer in the woman. Cancer-mindedness and a willingness to examine completely are all that is necessary to bring most gynecologic cancers under early curative treatment.

In these times when the latest refinements of technic fairly bewilder us all, it is well to remember that early recognition of gynecologic cancer is astonishingly simple, yet Emerson has truly said "Nothing astonishes men so much as common sense and plain dealing."

170 Allyn Street

### NEW PNEUMOTHORAX FILM

"Artificial Pneumothorax in the Treatment of Pulmonary Tuberculosis" is the title of a new sound film edited by Drs. James S. Edlin, Sidney Bassin, and Walter Lichtenberg. The film is introduced by Dr. Kendall Emerson, managing director of the National Tuberculosis Association.

The film is a timely presentation, observes the N Y T & H A. Journal, in view of the great increase in the amount of compression therapy being carried on in the treatment of pulmonary tuberculosis. The narrator describes in a distinct, clear voice the elements of pneumothorax treatment and demonstrates the utility of this form. The legend includes an exposition of the various complications that may attend both the induction and maintenance of collapse therapy. The film also shows the actual collapse of the lung during the administration of care under fluoroscopic control. This is one of the most technically illustrative parts of the picture.

### SPRING FEVER

The French philosopher Montaigne once said that each year he looked forward to spring as does the bridegroom to the bride, but when spring had arrived he felt like a septuagenarian who had married a young girl of eighteen.

These words were spoken about 350 years ago, but its truth is still obvious, observes the *Medical Record*. The only difference is that we explain the fact in another way. Many people who look forward to spring with joy are deeply disappointed because this season does not bring anything for them but unpleasant physical and mental feelings. They feel tired and weary, are fatigued and nervous, and complain of headache or stomach distress. They suffer from depressions which are quite new to them. In other cases a real feeling of fever is produced, culminating in a kind of spring ecstasy with a remarkable state of excitability, a strange happiness, and a sharpening of the intellectual creative powers.

## ULCERATIVE COLITIS

FRANK H. LAHEY, M.D., BOSTON

ULCERATIVE colitis remains today one of the most distressing diseases with which we as physicians or surgeons have to deal. It is distressing to the patient because he or she has to endure a disease that not only seriously affects his health but, in a very definite percentage of cases, is one that results fatally. This disease is distressing to us as doctors because we lack real knowledge as to its cause and have no specific form of treatment for it. In spite of the admission of these two so undesirable facts, the situation with ulcerative colitis is not so bad as one might expect it to be under such unfortunate conditions. With added interest in this disease within the last five years, particularly between those surgeons and those physicians especially interested in gastroenterology, there have developed methods and measures whereby a majority of the patients with this disease (59 per cent in our hands) can be given either complete relief or a return to health with mild persistent bowel symptoms largely by means of dietary regimen.

The remaining group (41 per cent) of patients are made up of the mortality of the entire group, surgical and nonsurgical (16 per cent), and those patients upon whom it has been necessary to employ surgery.

There have been performed in the clinic 70 ileostomies for this disease with a mortality rate of 22 per cent. There have been 48 partial or total colectomies done in the clinic upon patients with this disease. These colectomies are made up of 14 partial colectomies in which there has been no mortality and 34 total colectomies in which there were 2 operative deaths. Of these 32 patients who recovered from the operation of total colectomy (including the rectum), 30 are well. One committed suicide some time after leaving the hospital, and 1 died of perforation between the stages of the operation.

There has been a variety of speculations as to the cause or causes of this disease such as amebic infection, vitamin deficiency, allergic reaction, and even the presence in the intestinal tract of a specific organism. Exclusive of the last, which can now be excluded as

nonexistent, two of these factors undoubtedly have a role in the existence of the disease—vitamin deficiency and allergic reaction. In the light of the experience that we have had it is unlikely that amebic dysentery and ulcerative colitis are even closely related diseases except as they express themselves by colonic ulceration and the resulting colonic discharges. They have quite different proctoscopic pictures, with the presence of a specific organism in one and absence in the other, and with at least more or less specific treatment in one and the complete absence of it in the other.

The clinical features of the disease need little discussion. The ulcerative process starts in the rectum and rectosigmoid in 90 per cent of the cases. It remains segmental in 10 per cent but in time will usually involve the entire colon. The ulcerative process penetrates the mucosal lining of the colon and at an early stage infiltrates the colon wall essentially to convert that structure into a fibrotic tube (Fig. 1). The x-ray findings are dependably typical, with early loss of haustral markings extending in the advanced cases to the so-called lead pipe colon in which the colon appears by roentgenologic examination as a rigid walled tube (Figs. 2 and 3a and 3b).

Remissions without apparent cause are of not infrequent occurrence. Serious temperatures with alarming systemic reactions are frequently associated with this condition, and loose movements in excessive numbers are often the most distressing complications of this disease from the patient's point of view. Hemorrhage from the bowel and perforation with peritonitis, while not common complications of this unhappy state, occasionally appear almost out of a clear sky to add further seriousness to a situation already a disturbing or even desperate one. Associated with the disease are quite typical proctoscopic findings, the ulcerative process involving all of the rectal mucosa as opposed to the proctoscopic picture of amebic ulceration in which there are areas of quite normal mucosa between the amebic ulcerations.

While I am particularly interested in discussing the surgical management of ulcerative colitis, I cannot limit myself solely to thoughts of technical procedures in those patients with ulcerated colons, since no mechanical surgical procedure can restore the func-

Read by invitation at the Annual Meeting of the Medical Society of the State of New York, New York City, May 9, 1940.

From the Department of Surgery, The Lahey Clinic, Boston.

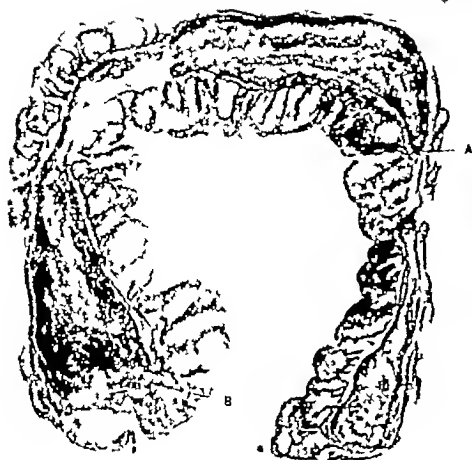


FIG 1 Fibrotic colon of advanced case of ulcerative colitis. Note the contraction of the colon, with injection and ulceration still present in the cecum and strictured areas. A, blind ends, B, ileum.



FIG 2 A segmental area of ulcerative colitis between the arrows.

Chloride deficiency is often found in cases of diarrhea or profuse ileal drainage. Giving large doses of salt by mouth or by vein improves the patient's condition.

Opium is a useful drug for the control of exhausting diarrhea. Bismuth and kaolin may slow up the bowel action in some cases, while in others they seem to increase the number of stools. Adequate sedation for nervous patients is highly essential.

tion to a fibrosed colon of absorbing vitamins K and C, whether or not the fecal stream has been sidetracked by ileostomy. A food to which a given patient is allergically sensitive can, in certain cases, result in such activation of a previously quiescent colon that temperature elevations and rectal discharges of blood and pus can occur.

Whether or not surgery is required in a given case, adequate nonoperative measures are essential in all of them. A dietary regimen to supply the caloric needs of a patient hampered by fluid and fuel loss, as well as mineral and vitamin losses, must be supplied.

The diet for a patient with active ulcerative colitis and diarrhea should be low in residue, high in caloric value, and nonstimulating to intestinal peristalsis so as to permit slow passage through the small intestine and allow for adequate absorption. Boiled milk, eggs, and the refined cereals make up the basis of this diet, and meat can be used early as a low-residue food. Individualization is necessary because of the fastidious appetites and food idiosyncrasies frequently found in these patients and to which it usually pays to give consideration. This type of diet tends to be low in vitamins of the B, C, and D groups, and supplementary administration of these factors is usually necessary. Long-standing depletion, as well as poor absorption, needs to be considered in planning the dosage. Parenteral administration is often desirable.

The surgical treatment of ulcerative colitis today involves only two surgical aims—one, sidetracking of the fecal stream by ileostomy, the other, removal of a part of the colon (partial colectomy, 14 cases, no mortality) or total colectomy, including the removal of the rectum (34 cases with 2 fatalities). The employment of other surgical procedures, such as appendicostomy and cecostomy, has been practically abandoned by those with any considerable experience with this disease.

Ileostomy (70 cases, mortality 22 per cent) is employed either as a single procedure with the hope (1) that such a degree of resolution may be accomplished in the colon that it can again have its function as a normal fecal pathway restored by ultimate closure of the ileostomy (this has been done in 3 cases in our experience—all well) or (2) as a permanent procedure with the hope that such complete and permanent sidetracking of the fecal stream will result in such established quiescence of the colon that its later removal in part or entirety will not be necessary. This has been true in 4 of our cases.

While ileostomy is a part of any surgical procedure (fecal sidetracking alone or followed by colectomy), its employment in this disease occurs under two quite different conditions: (1) as an emergency measure in a patient in a more or less desperate state of intoxication and depletion and (2) as a deliber-



FIG 3a

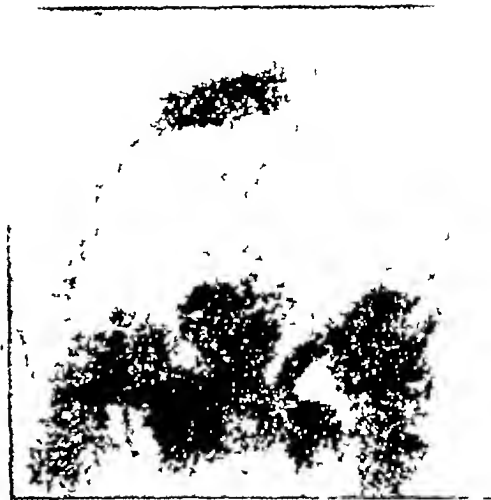


FIG 3b

Figs 3a and 3b The typical lead pipe type of colon in an advanced, fibrotic process of long-standing ulcerative colitis

ate measure either preliminary to the later removal of the colon or as a complete procedure in an attempt to obtain quiescence of an activated colon, which activation has failed to be controlled by nonoperative measures

Dr Richard B Cattell (whose interest and contributions to this subject have far exceeded my own) and I have performed most of these 70 ileostomies in the clinic, and it has been definitely established in our minds that the successful surgical management of this disease has to do particularly with when and how ileostomy is done. As we have reviewed our experiences with ileostomy from time to time, we have been impressed with the fact that the decision for or against the production of an ileostomy is an extremely difficult one. Many conflicting psychologic factors are involved.

If ileostomy were not such an objectionable type of enterostomy there would be considerably less inclination to delay in the decision to perform it. One must admit, however, that with the liquid character of its fecal discharge it is managed with difficulty and at the best requires several changes of the bag daily. One must also admit that in many of the cases, at least for some time, there is considerable irritation of the skin about the wound from the liquid discharge. One must likewise consider that many of these patients

have been through several acute episodes with their ulcerative colitis from which they have successfully recovered, and this encourages them to hope with each episode that an ileostomy will not be necessary. Finally, one must appreciate that these patients' management is often in the hands of a medical man or gastroenterologist who feels on the one hand some justification in a risk taken to avoid the probable permanent presence of an unsatisfactory type of enterostomy and who on the other hand does not have the first-hand conscience prick which goes with the personal responsibility for the surgical procedure and its fatal outcome if it is done too late. Always in approaching the surgical treatment of this disease there will be this delicate psychologic balance swaying between saving these patients from a too early or perhaps unnecessary ileostomy and permitting him or her in this endeavor to advance to such a state in the disease that when ileostomy is ultimately done a fatality is quite likely to result. These remarks are not made with any critical intent concerning anyone but ourselves and rather to present frankly our convictions based upon this considerable experience from which we have largely learned to avoid these errors.

We are particularly fortunate in being an integrated group of gastroenterologists, surgeons, and roentgenologists working inti-

mately and tolerantly together, and we are hopeful that the presentation of our experiences and views may possibly save others, perhaps working as individuals, from making some of the mistakes that we have almost of necessity made in the acquirement of this experience

In a general way one may say that if an error is to be made as to the doing of an ileostomy in patients with severe ulcerative colitis it is better that it be done a little too early than a little too late. One can at least close the ileostomy at a later date should conditions justify it, while under the other conditions one only regrets that it was not done sooner.

If we are to make any real attempt to check the progress of a case of ulcerative colitis not progressing satisfactorily under nonoperative management and if we are to make any pretense of increasing the number of cases in which we can later close the ileostomy and restore the fecal pathway, we must employ ileostomy at an early stage and before the procedure is forced upon us by the unfavorable progress of the disease. If we wish to increase the number of cases in which possible closure of the ileostomy can even be considered, ileostomy must certainly be done at such a stage in the ulcerative colitis that the colon has not become rigid and converted into a fibrotic tube. It will be necessary to establish ileostomy in certain of the early segmental cases of ulcerative colitis. It will be necessary to establish an ileostomy in certain cases of ulcerative colitis in which infiltration of the colon has as yet not become marked and in which cases there must still be assumed the possibility that with continued medical management there will be recovery without ileostomy from the immediate episode.

If we are to make greater progress than we have already made in this disease, we definitely must do a larger series of cases in which ileostomy is deliberately undertaken reasonably early in the disease with the hope of checking its progress and later restoring the fecal pathway by closing the ileostomy. An insufficient number of cases handled in this way has as yet been done so that one cannot definitely say whether or not this procedure has sufficient value to justify it. By this plan one would still medically manage those patients whose disease is tractable to medical management but do early temporary ileostomy in those patients whose disease tends to be intractable to medical management (41 per cent of all of the cases).

From these remarks one can see how necessary it is to have available the interest and judgment of men who are especially interested in this disease and who, based upon a considerable experience with it, can make these decisions for or against ileostomy and later for or against colectomy. As in other special diseases, but particularly in ulcerative colitis, the factors of experience and judgment have a great deal to do with its surgical mortality.

Since ileostomy in ulcerative colitis is usually done at a stage when the patient's progress in the disease is unsatisfactory, how it is performed also often plays a considerable part in the outcome as it relates to a fatality. The ideal ileostomy is one of the divided type in which the ileum with its mesentery is divided between clamps, one loop—the proximal—brought out at one level and the other loop at a separate level so that if later colectomy proves necessary it will be possible to excise the distal ileostomy together with its attached ascending and transverse colon and leave the proximal or permanent ileostomy undisturbed.

Operations involving colectomy after the establishment of an ileostomy when the ileostomy is of a loop type are extremely undesirable since one cannot with ease and safety cut off the attached distal segment of a loop colostomy and leave it just beneath the peritoneum. It adds considerably to the technical difficulties of colectomy following the establishment of an ileostomy if the ileostomy is of the loop type. It greatly simplifies this procedure if it is of the divided type, the ends being brought out at different levels.

It is of the utmost importance to realize the above point and to utilize the keenest judgment concerning when to do a loop colostomy and when to do a divided colostomy. If those patients with ulcerative colitis are in an advanced stage of intoxication at which stage in the past they have not infrequently been referred to a surgeon, any technical procedure as extensive as divided end ileostomy requiring manipulation of the ileum, ligation of the vessels within the mesentery, and division of that structure will be sufficiently extensive and will require sufficient manipulation of the infected ileum and colon so that a fatality from shock or peritonitis will be quite apt to occur. It is in this advanced and desperate type of ulcerative colitis when ileostomy is indicated that the simplest type of ileostomy should be done—that is, loop colostomy. In these desperate cases no attempt should be

made to visualize the colon Through a relatively small incision the terminal ileum should be found and picked up with the least degree of manipulation, a rod should be inserted underneath the mesentery, and the operation should be completed in the shortest possible time with the least amount of technical manipulation One can hardly overestimate the importance of the decision as to the type of ileostomy in the mortality of this disease

Another important thing in ileostomy, particularly in the end ileostomy in which a later colectomy may well be required, is that some form of suction apparatus be introduced into the ileum, particularly during the first week to ten days after the ileostomy has been established An excellent method has been devised by Dr Rolf Lum, a former Fellow in the clinic This is of great importance because ileal discharges, irritating the skin as they do, tend particularly to break the wound down If the liquid discharge of ileal contents can be controlled for seven to eight or nine days until the wound has healed, the skin can then be protected by the various materials that have been employed—bronze or aluminum paint or Fuller's earth The ileal contents may then, with relative impunity, be permitted to discharge upon the skin

Another important point to realize in connection with ileostomies is their tendency, due to infection and digestion about the wound, to loosen and to pull back into the abdomen This has happened in our experience more than once Likewise, there is the tendency for ileostomies to prolapse Because of these two facts, for some years we have fixed the mesentery of the ileum to the parietal peritoneum under the abdominal wall by several sutures (1) to overcome loosening and retraction of the established ileostomy and (2) to overcome the danger of its prolapse This is technically an extremely important point in the management of ileostomy

Following the establishment of an ileostomy there is frequently such striking improvement in the condition of these patients that they are hardly recognizable as the same individuals In a certain percentage of cases, however, because of stricturing and persistent infection and ulceration within the remaining colon, temperature reactions, together with discharges of blood and pus, occur One of the problems not unlike that of ileostomy in this disease then arises—that is, under such conditions when should removal of the remaining colon by partial or complete colectomy be

advised? Just as with ileostomy, one may defer this decision until such a time that it is so hazardous that when it is undertaken a fatal outcome will occur in too high a percentage of cases

We believe that when a patient who has had an active intractable ulcerative colitis with serious temperature reactions and loose discharges has had an ileostomy with relief and then has had a return of the activity of the process the question of colectomy should be seriously considered If relief from such a return of symptoms occurs and then recurs again, colectomy in our opinion becomes definitely advisable

In the performance of the colectomy in these cases the first portion of the operation will consist in the removal of the right and transverse colon up to the splenic flexure, the end of the remaining distant colon being brought out into the wound to rest upon the abdominal wall It has been the custom of some surgeons to close over this distal end and drop it back into the abdomen We have always felt that with the infection and stricturing so often present in the remaining bowel there is always the danger of such a closed end becoming opened and producing a peritonitis, an event which we know to have occurred in the hands of one of our friends interested in the surgical treatment of this disease We have found that there is little discomfort associated with the temporary implantation of this open distal end of the colon upon the abdominal wall, and certainly it is a definite safety factor in this operative procedure

In two to three months time through a long left rectus incision, the left colon and sigmoid are removed If the patient's condition permits, the patient is turned over after the abdomen has been closed, and the rectum is then removed These colectomies are done under nupercaine spinal anesthesia The mortality rate in the 48 colectomies (partial and complete) has been but 4 per cent

As we have discussed this disease, most of the questions such as the percentage of patients requiring surgery, the percentage of patients not requiring surgery, and the surgical mortality have been answered One of the most important questions, however, both to the physician who must advise these patients and to these patients themselves, is how does one manage with an ileostomy and is it possible to enjoy life satisfactorily with one?

The above questions should be answered

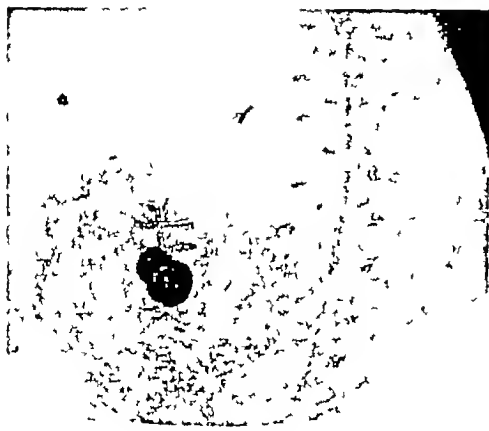


FIG 4a.



FIG 4b

FIGS 4a and 4b Typical ileostomy and type of bag worn with it

frankly By no stretch of the imagination may one say that ileostomy is as satisfactory an arrangement for the permanent discharge of the fecal stream through the abdominal wall as is colostomy. One must anticipate that, unlike colostomy in which by means of a constipating diet there will be no fecal discharge from the colostomy except with irrigation, with ileostomy a bag will need to be worn constantly. It will be necessary to empty the bag five to six times daily. A bag has been devised with a rubber flange about its neck which fits closely to the skin and with which patients remain quite dry and without objectionable odor about them (Fig 4).

One may also be reasonably sure in assuring patients with an ileostomy that with removal of their colon the management of their ileostomy will be made somewhat easier. There is something about the removal of the colon that causes the ileal discharge to be less fluid in character. Some time ago I suggested that this might well be due to the assumption of some fluid absorbing capacity on the part of the ileum after removal of the colon. One may certainly tell patients who are contemplating this surgical procedure that with an ileostomy they may undertake any activity they desire, that they may resume any reasonable occupation, and that the patients whom we now have with ileostomies are quite happy and contented individuals.

### Conclusions

Our experiences with the operative and nonoperative treatment of ulcerative colitis are reported

The total mortality of the disease in our hands, together with the number requiring ileostomy and colectomy, partial and complete, is reported. The condition of the patients after colectomy is presented.

The indications for ileostomy are discussed, and the types of ileostomy and technical procedures to make them safer are recorded.

The indications for colectomy and the results from the patient's point of view after ileostomy are stated.

### Discussion

Dr John H Garlock, *New York City*—I have enjoyed hearing Dr Lahey's paper and find that I am in accord with almost everything he has said. I believe everybody is agreed that the great majority of cases of ulcerative colitis constitute a medical problem and should never be considered for surgery. I am told by the gastroenterologists at Mt Sinai Hospital that in the various departments at that institution there are seen throughout each year approximately 100 to 150 cases of ulcerative colitis. Yet, since 1937 when a more intensive study of the surgical therapy of this disease was initiated as a group problem, only 31 patients have been surgically treated.

May I emphasize again that the management of the cases that come to the surgeon is a cooperative problem involving the concerted efforts of the gastroenterologist, the medical staff, the x-ray department, the proctologist, and the surgeon. My associates and I have leaned heavily on the gastroenterology department headed by Drs. B B Crohn and A. Winkelstein.

As our experience has grown with this disease it has become more and more evident that certain criteria had to be established for the institution

of surgical treatment At the hospital we are fairly well agreed that the indications for surgery are the following (1) uncontrollable hemorrhage, (2) impending perforation, (3) acute fulminating colitis with marked toxemia, (4) chronic intractable colitis, and (5) segmental colitis.

The majority of the patients have had a preliminary ileostomy Our mortality with this procedure has been 11.7 per cent I believe the reduction in mortality in ileostomy depends essentially on the optimum time for the operation and the care with which the operative procedure is carried out. We have used a type of ileostomy similar to the one described by Dr Lahey without encountering one instance of prolapse of the proximal ileostomy stoma An important point in the technic of the operation is concerned with the determination of the surgeon never to visualize or palpate the diseased colon. The slightest touch of an instrument or a finger may produce a subsequent perforation.

The experience of surgeons who are operating

for this disease throughout the country is insufficient at the present time to make any hard and fast rules concerning the removal of the rectum in every case of ulcerative colitis. Inasmuch as the exact cause of this disease is as yet not known, and may be forthcoming at any time, we have felt that whenever possible, provided the general well-being of the patient will not be disturbed thereby, an attempt should be made to preserve the lower sigmoid and rectum for possible use at some future date in re-establishing intestinal continuity. In the 31 cases already referred to, we have found it necessary to remove the rectum in only two cases because of extensive perirectal infection and perianal sinus formation. We have under observation 2 or 3 cases in whom there is a progressive restoration of the rectal mucosa to normal.

This entire problem is of great importance and will require continued concerted efforts of the gastroenterologist and surgeon before a solution is found.

### TOO MANY APPENDICITIS DEATHS

Deaths from appendicitis in the United States increased from 7,371 in 1900 to over 18,000 in 1930. Although the number of deaths has fallen off since then, it is estimated that about 14,000 people died from this disease in 1939. In 1937, the last year for which reliable information is available, the United States had the second highest death rate from appendicitis in the world. The disease strikes persons of both sexes, and at all ages, neither infants nor old people are spared.

Surely, any disease which causes so many deaths each year is a matter of vital public concern, remarks *Public Health Reports*. Appendicitis cannot be prevented, but within certain definite limitations few deaths, if any, need result from this disease.

### MOTION PICTURE ON TUBERCULOSIS

Tuberculosis and two of its victims are the theme of *They Do Come Back*, a new sound motion picture produced by the National Tuberculosis Association, reports *Health News*. This film was designed especially to visualize the relationship between rehabilitation and the rest of the tuberculosis program and to inform the public regarding the need and the nature of rehabilitation service.

The State Health Department has added *They Do Come Back* to its collection of circulating health motion picture films. The running time is about seventeen minutes. Prints in the 16-mm size may be borrowed, subject to the usual conditions, by applying to the Supervisor of Visual Instruction, State Department of Health, Albany, New York.

### MARROW TRANSFUSIONS

The simple process of injecting healthy bone marrow (the soft material which fills the bone cavities and takes part in the building of blood) into that of the breast bone of patients with marrow deficiencies may lend itself to the solution of many problems of blood disorders, Drs Maurice Morrison and A. A. Samwick, of Brooklyn, suggest in the *J.A.M.A.*

Blood cells develop in the bone marrow and are discharged into the blood stream when mature. Thus there is a direct relationship between disturbances of the marrow and of blood formation.

### GOVERNMENT MEDICINE AT WORK

I visited the State of New Mexico. I went to Hot Springs. I saw a hospital that cost \$2,500,000 accommodating 90 crippled children, built out of Government money. Yet there was not a single orthopedic surgeon in the State of New Mexico to take care of those crippled children. So they import an orthopedic surgeon two mornings a week from El Paso, Tex., on a salary larger than that paid to the Governor of New Mexico in order to take care of 90 children in a hospital in a town of three or four hundred people in the State of New Mexico. That is Government medicine—Dr Morris Fishbein.



Fig 4a



Fig 4b

Figs 4a and 4b Typical ileostomy and type of bag worn with it

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persistently open. A young girl had such a tumor in the mouth of the upper lobe of the right bronchus. In spite of a good pneumothorax it was found impossible to close the cavity. Removal of the tumor, however, and opening the bronchus allowed the cavity to contract.

Occasionally, a tuberculous ulcer or granuloma will be the site of hemorrhage. We have encountered 3 such cases in which the need of bronchoscopic treatment was urgent since the hemorrhage was not controlled by other measures. Few will deny then that occasions may arise when scar strictures, tumors, and hemorrhages from ulcerations may demand treatment.

On the other hand, there is no doubt that many tracheal or bronchial lesions will heal without direct local treatment. To illustrate this point let me cite a case that occurred in the service of my colleague, Dr. Alexander Ghiselin at the Seton Hospital.

A young woman, 28 years of age, was admitted to Bellevue Hospital on July 26, 1938, with a complaint of fatigue, productive cough, and cervical adenitis of four months' duration. An x-ray previously taken showed minimal apical involvement. Four months later she began with wheezing on the left side near the midline, both inspiratory and expiratory. Her sputum was more profuse, with slight dyspnea. The sputum taken in January was reported positive. She was admitted to the Seton Hospital on January 19, 1939. The patient seemed much sicker than the pulmonary lesion warranted. Her weight was 90 pounds, and she had a paroxysmal productive cough. Bronchoscopy performed on February 16, 1939, was as follows:

"There is a lesion beginning on the left wall of the trachea 2 cm. above the carina and extending around 25 per cent of the circumference. The entire left main bronchus is involved in a tuberculous bronchitis, continuous with the tracheal lesion. The tissue of the lesion is the hyperplastic type which is very friable and bleeds easily. Silver nitrate ten per cent applied."

Another bronchoscopy was performed February 28, 1939, with about the same findings. As the patient reacted badly to the bronchoscopic treatments they were abandoned. The patient went steadily downhill—profuse positive sputum, paroxysmal cough, temperature range 101 to 102 F daily. During June, 1939, clinical and x-ray evidence of total left bronchial obstruction developed, and this was followed by an effusion that was tapped on the left posteriorly, about 400 cc being removed each time. After this procedure the temperature suddenly dropped to normal, the patient started to gain weight, sputum decreased, and wheeze disappeared. The effusion was absorbed.

A bronchoscopy performed on November 30, 1939, revealed normal dry bronchial tree. No sign of scar or stricture to indicate that there was ever any endobronchial involvement. She continues to gain weight, her sputum is now negative, her temperature is normal, and the cervical adenitis has subsided.

To summarize, this represents a case with extensive pulmonary and tracheobronchial lesions, bronchoscopically examined twice. After this, the patient was extremely ill for a long time but finally became better. She was examined with a bronchoscope again after the improvement, and complete healing without traces of disease of the tracheobronchial tree was found. The two lesions had improved together. Certainly if this case had been treated bronchoscopically and such result had come about, the temptation would have been to claim the good results had been produced by the bronchoscopy.

A similar case occurred in my own experience.

A woman, about 50 years of age, was quite sick with tuberculosis and complained a great deal of wheezing and shortness of breath. She had a rather extensive pulmonary tuberculosis. The report on the bronchoscopy was as follows:

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Two weeks later we had this report from her doctor: "She is a very miserable person, complains of coughing constantly. She has a constant 'sick stomach,' eats very little, temperature ranges from normal to 102, often high in the morning and normal at night." This patient appeared to be so sick that hope was almost given up, yet she improved so that we were able to examine her with a bronchoscope again on April 29, 1938, just five months later. I was able then to report on the bronchoscopy as follows:

"The tracheal ulceration appeared to be healed although the mucous membrane was still extremely red. There was still extensive ulceration in the right bronchus. Used vapor mercury lamp."

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# RESULTS OF TREATMENT OF TUBERCULOSIS IN THE TRACHEA AND BRONCHI

JOHN D. KERNAN, M.D., and A. J. CRACOVANER, M.D., New York City

IN CONSIDERING the results of treatment of tuberculosis in the trachea and bronchi, let it be understood that I am speaking from the point of view of the bronchoscopist and that the treatment I am dealing with is treatment applied through the bronchoscope. I think it is generally agreed that for diagnostic purposes in pulmonary tuberculosis bronchoscopy is extremely useful. This procedure quickly and accurately clears up questions as to the cause of persistent positive sputum, wheezes, hemorrhage, shortness of breath, and other symptoms that are obscure to the ordinary methods of examination.

Once the diagnosis of tracheal or bronchial tuberculosis is made, then the question of treatment arises. The first point to consider is, should there be any bronchoscopic treatment? There are those who consider that the ordinary treatment of pulmonary tuberculosis carried out by the medical man, or by the chest surgeon when necessary, is quite sufficient and that if the pulmonary lesion is healed the bronchial lesion will heal spontaneously at the same time.

The question, however, is not so simple as that. In the course of pulmonary tuberculosis symptoms will arise which call for immediate relief. Consider, for instance, the circumstances when a bronchus is obstructed by scar tissue or a tuberculous granuloma. The effects of any obstruction on the bronchi and lung beyond are disastrous; the lung will collapse, and sooner or later infection will ensue and abscess or bronchiectasis will follow. It is, therefore, sometimes necessary to make an attempt to stretch a scar or to remove a tumor for purposes of drainage. Let me illustrate by a case.

This woman had been treated a long time for tuberculosis and had what appeared to be a successful pneumothorax. Her symptoms, however, persisted—cough, sputum, afternoon fever, and the like. Bronchoscopy showed a contracted left main bronchus with granulation tissue obstructing the remaining lumen. This granulation tissue was reduced by silver nitrate, and the lumen was dilated sufficiently to admit an aspirating tube. A considerable quantity of pus was removed by

aspiration, and the same procedure was carried out several times. The abscess soon dried up, and the woman became symptom-free. She now has a greatly contracted main bronchus, the pneumothorax, no sputum, no cough, and no fever.

The results of stretching scar structures are not always so successful. We have had several cases in which the suppuration has tended to persist and in which only continued treatment keeps the lumen open enough for drainage. It is our custom to dilate these cases whenever symptoms of obstruction arise as shown by pain in the chest, rise of temperature, and limitation of sputum. The method first used by us for dilatation was the use of the glove-stretcher dilator. More recently we have been using a copper bougie through which is passed a positive galvanic current. This has seemed to result in permanent softening of the scar tissue.

Occasionally, contracted bronchi will close completely. This does not always result so disastrously as one would expect. One of our most successful cases was a woman who had an extensive ulceration in the lower end of the trachea and left main bronchus. Several bronchoscopic applications of silver nitrate resulted in complete healing of the ulceration and complete closure of the left main bronchus. In spite of the fact that one would have expected the complete cessation of drainage to make the patient very sick, on the contrary, all her symptoms cleared up at that time and have not recurred. This suggests that in certain cases where it is possible to get a fairly dry lung it might be good treatment to close purposely the bronchus and so suspend the function of the particular lung in question. The late Dr. Pol Caryllos showed, by experimental work on dogs, that large cavities could be closed by occluding the bronchus leading to them.

Tuberculous tumors should be removed preferably by diathermy coagulation or by silver nitrate. It is not advantageous to use forceps, as this procedure causes some bleeding and, if the blood gets in other parts of the lung, may result in the spread of the disease. Sometimes a tumor in the mouth of a bronchus will have a ball-valve effect and trap air in the lung in such a way that cavities stay

persistently open. A young girl had such a tumor in the mouth of the upper lobe of the right bronchus. In spite of a good pneumothorax it was found impossible to close the cavity. Removal of the tumor, however, and opening the bronchus allowed the cavity to contract.

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trachea and the left main bronchus was normal in appearance. Any trace of the former ulceration and congestion no longer existed. The right main bronchus was negative to below the middle lobe bronchus. At this point there was a stricture so that the lumen was about  $\frac{1}{4}$  inch across. The lips of this stricture were congested, and beyond it there was evidently ulceration, as the suction tube when passed started up a little bleeding.

This case is one of very extensive tracheal tuberculosis which healed with minimum treatment. In view of the case previously reported and in view of the fact that she had only two treatments, I hardly venture to maintain that the healing was the result of the bronchoscopies. Yet note this: Only the area reached at the first bronchoscopy healed after that bronchoscopy. After the second bronchoscopy the right bronchus healed.

These 2 cases, I feel, present the case of those men who maintain that it is not necessary to actively treat tracheobronchial tuberculosis through bronchoscopy but that one should content oneself with an occasional observation. This is very different from a weekly or fortnightly bronchoscopy.

There is much to be said, however, in favor of treatment. Consider what happens to the untreated cases. One patient had tracheobronchial tuberculosis and was never treated except by general measures. A very extensive scarring and contraction was evident. The disease had advanced to complete destruction of the bronchus, and under such a condition, of course, the lung beyond will be completely destroyed. It certainly would be worthwhile to avoid such a result if possible, and I am quite sure it could be contended that early and persistent treatment will heal many lesions before they advance to such a stage of destruction.

The result of treatment will, of course, depend much on the stage at which treatment has started and on the nature of the lesion. Beyond any doubt, shallow ulcerations and localized masses of granulation tissue involving for the most part the mucous membrane are more or less easily controlled. If, however, the tuberculosis has started deep in the wall of the bronchus and has involved the whole thickness of the wall with destruction of the cartilage, treatment will naturally be much less effective. Small shallow ulcers and localized masses of granulation tissue heal promptly. Tight strictures and deep extensive ulcerations require prolonged treatment and many bronchoscopies.

The following is the report on 56 cases. We have had a number of other cases, but treatment and observation were not carried on long enough for any conclusions to be drawn. The results here reported pertain only to the bronchial lesions. Some of the cases may have developed further parenchymal lesions or even may have died from the tuberculosis. We report only on the effects of treatment or the tracheobronchial lesions.

### Lesions Found on Bronchoscopy

#### *Ulceration or Granulation Tissue—50 Cases.*

The ulcers varied in size and depth, some merely small patches and others including the whole circumference of the trachea or bronchus. It must be remembered that only the upper end of an ulcer can be seen through the bronchoscope. It is difficult to tell how far down a bronchus the lesion reaches. In 7 of the cases with ulcers some healing had already taken place so that fibrous strictures were also present. The granulation tissue varied in amount from small elevated masses to tumors so large as to be obstructive. It may be asked here how we knew that they were tuberculous ulcers and not merely simple ulcers. For the most part it was assumed that an ulcer on the side of the pulmonary lesion when the sputum was positive was tuberculous. This may not be a highly scientific attitude, but it was not considered safe to confirm the diagnosis by taking biopsies. In a few cases the diagnosis was confirmed by stained smears.

*Fibrous Strictures—4 Cases.*—We considered that these confirmed the previous presence of an ulceration that had healed.

*Swollen Mucous Membrane—2 Cases.*—These cases had much the same symptoms as those obstructed by granulation tissue or fibrous stricture, and yet only an intensely red, swollen, mucous membrane could be seen.

### Symptoms Which Called for Bronchoscopy

*Wheeze.*—Thirty-six cases had as their main symptom wheeze, sometimes loud enough to be heard at a distance from the patient. At times this was accompanied by a persistent cough. In 1 case the adventitious sound took the form of a fluttering on both inspiration and expiration. This proved to be caused by a pedunculated mass of granulation tissue which moved up and down on respiration.

*Positive Sputum Persisting—13 Cases.*—In these cases the pulmonary lesion was considered to be well controlled or even healed, and yet the sputum continued to be positive. The discovery of a bronchial lesion was considered to be sufficient explanation. At times this lesion was found on the opposite side from the pulmonary. As a rule the sputum became negative when the ulcers healed.

**Hemorrhage**—Three cases were examined by a bronchoscope because of hemorrhage. Ulcerations were found. Treatment of the ulcers controlled this symptom. In 1 case bleeding recurred after eighteen months. Bronchoscopy showed that the bronchial lesion had recurred.

**Severe Dyspnea—3 Cases**—These were cases of extensive tracheal ulceration with either masses of granulation tissue or scar tissue causing the obstruction. They were naturally difficult cases to handle. One of them showed no tendency to improve and died from spread of the disease in the lungs. A second of these cases healed with almost no trace of the disease in the trachea but later died of pulmonary disease. The third had a healed tracheal lesion but with extensive scar formation. This calls for monthly stretching with bougies. This woman was at first examined with a bronchoscope every week, the tube being passed through the ulcerated trachea. In spite of this weekly trauma, the ulcerations have healed.

**Persistent Cavity—1 Case**—This girl was being treated for a pulmonary lesion on the right side. In spite of an excellent pneumothorax the cavity in her lung could not be collapsed. When she was examined with a bronchoscope, a small tumor was found in the mouth of the upper lobe of the right bronchus, which was obstructed by the ball-valve action of the tumor. Removal of the tumor aided in the reduction of the size of the cavity.

### Methods of Treatment

Our first treatment was diathermy coagulation. We used it on only 3 cases. Two responded very well as far as the disappearance of the lesion was concerned, but there was formation of considerable scar tissue. In the third case, which appeared to be improving, a fatal hemorrhage occurred shortly after treatment. The lesion was extensive in this case. The improvement noted was only illusory as the lesion extended far beyond the reach of treatment, both in length and depth. Coagulation was given up.

**Silver Nitrate 10 Per Cent.**—Twenty-one cases were treated in this manner. It proved to be efficient and it is certainly simple. Silver nitrate has no such healing effect on tuberculous tissue elsewhere—for instance, in the larynx. One may suspect that perhaps some of the ulcerations that healed so promptly were simple granulation tissue, not tuberculous. The demonstration by several workers that strong silver nitrate can close a bronchus made us fear that this might occur in our cases, so we use silver nitrate with great caution, not stronger than 10 per cent.

**Mercury Vapor Lamp—14 Cases**—This is used every week or two through the bronchoscope. It appears to be efficient and produces a minimum of scar tissue. Some of the cases in which silver nitrate failed, healed under treatment with the mercury vapor lamp. A

comparison of the number of treatments needed with silver nitrate and the lamp shows that those treated with the first needed two to six treatments and those with the latter needed four to fourteen treatments, so that those treated with the quartz light took longer to heal. Treatment of an ulcer in some cases produced a stricture that, in turn, had to be dilated by ionization. It is suggested that the mercury vapor lamp can be applied for a much longer time than hitherto, also, by using a flexible shaft it could be inserted without bronchoscopy once the distance of the lesion from the teeth had been ascertained. This would considerably simplify treatment. Silver nitrate, of course, could only be applied through the bronchoscope.

To compare further the use of the mercury vapor lamp and silver nitrate it may be noted that, of 14 cases treated at first by the lamp alone, 11 healed without other treatment. Of 21 cases treated at first by silver nitrate alone, only 11 healed without other treatment—namely the lamp. Of the 11 cases in which both were used, 8 got well.

**Length of Time**—Treatment lasted from two weeks to six months, i.e., from the first treatment to complete healing.

### Results

Twenty cases were completely healed, 6 cases, completely healed with slight narrowing of the bronchus, 5 cases, completely healed with stricture of the bronchus, 3 of these strictures were treated by ionization successfully so as to give an adequate lumen and 1 of these strictures did not yield to treatment and remains stenosed, but the patient is symptom-free, 2 cases, completely healed with complete occlusion of a bronchus, and 2 cases of stricture of the bronchus treated with ionization were dilated to such an extent so as to produce an adequate lumen (Caruso and Inglin).

Therefore, 35 cases may be considered cured as far as their endobronchial lesion is concerned. Nine cases were complete failures. Three cases were improved, but the improvement was not adequate and treatment was suspended. Eight cases were improved at the time of their last treatment but for some reason patients did not return for further observation and care. One case is still under treatment. This completes the 56 cases.

In this series 4 cases had recurrence of the ulceration and by further treatment were healed again, indicating the need for continued observation. Three cases had recurrence but did not heal when further treatment was instituted. Three attempts were made to

occlude the bronchus permanently by treatment with strong silver nitrate, cautery, and cauterization with ionization—these were failures

In this series there were 2 cases that developed a spread of the infection following bronchoscopy. It is difficult to say, however, whether the bronchoscopy was the cause of the spread or not. One case eventually became entirely healed. The other died shortly afterward of miliary tuberculosis. The autopsy in this case showed the bronchus to be healed.

One case expired following bronchoscopy when she developed a profuse hemorrhage on cauterization of an ulcerative lesion.

Bronchoscopy is useful for diagnosis. Certain cases urgently call for bronchoscopy for treatment purposes. Many other cases are healed more quickly and with less damage by bronchoscopic treatment. The use of the mercury vapor lamp will probably prove most efficient.

103 East 78th Street

## Discussion

Dr. Edward N. Packard, *Saranac Lake, New York*—The brief time allotted to me precludes a thorough discussion of the various points raised by Dr. Kernan on the diagnosis and treatment of tuberculous tracheobronchitis. I would like, however, to emphasize the growing importance of the place of the bronchoscopist in the treatment of pulmonary tuberculosis. Some ten or twelve years ago the observation was made that atelectasis of the lung, in whole or in part, could and did take place in a fair number of patients with tuberculosis. Some of these patients later came to autopsy, and it was found that what initiated the collapse of the air cells was an occlusion of the main stem bronchus. In the cases that I saw, the lumen of the bronchus was blocked by a collar of dense fibrous tissue surrounding and involving the bronchial wall. This was tuberculous in origin. Dr. Kernan mentioned in his paper that the end results of such an occlusion may be good or they may be bad. Cavities have closed as a result of this blocking process, and the diseased lung eventually has become a fibrous mass—the so-called *carinated lung*. On the other hand, the results of such bronchial occlusion may be disastrous. Pyogenic material locked up within the lung may take on all the characteristics of an acute pulmonary abscess. One of the important roles that the bronchoscopist is called upon to perform is to attempt, by whatever means he has at hand, to forestall these dire consequences. Dr. Kernan has outlined for us the various procedures that he has employed.

If a bronchus can become occluded by tuberculous changes within or around its lumen, then there should be some means of recognizing

beginning or partial stenosis. It is now well established that the so-called asthma of which tuberculous patients sometimes complain is, in the great majority of instances, due to bronchial obstruction and not to an allergic state. Again the localized and persistent wheeze heard during both phases of respiration is almost pathognomonic of bronchial obstruction. The bronchoscopist can visualize the offending disorder, and many times he can cure, or at least give, relief.

The more frequent use of the bronchoscope in tuberculous patients has revealed unsuspected ulceration of the mucosa of various parts of the bronchial tree. These ulcers are as difficult to heal as tuberculous ulcers in other organs or tissues, and one might argue, as Dr. Kernan points out, that when healing takes place after a few bronchoscopic treatments the process may be due to nontuberculous chronic bronchitis. However, the removal of tissue for microscopic study is hardly justified for fear of creating fresh ulceration.

I would like to say a further word on the importance of visualizing the major bronchi before collapse measures for tuberculosis are carried out. This applies particularly to artificial pneumothorax, and thoracoplastic operations. In a patient who is dyspneic, who wheezes, or who has difficulty in raising sputum, much harm may be done by collapsing the lung, particularly if extensive, ulcerative, tracheobronchial tuberculosis is present. Here we are entirely dependent upon the bronchoscopist, and the future course of the patient for good or for bad may rest upon what he sees or upon what he is able to accomplish. If the symptoms are due to partial stenosis but are of the smooth membrane type, collapse measures are not necessarily contraindicated.

What I have thus briefly touched upon, without commenting upon the efficiency of the various procedures used to attempt to heal ulcers or relieve strictures, gives a broad point of view of the role that bronchoscopy plays in the present-day treatment of pulmonary tuberculosis.

Dr. J. Maxwell Chamberlain, *Oneonta, New York*—We are all aware of the debate in regard to the bronchoscopic treatment of endobronchial tuberculosis. This is due to the fact that we are unable to establish an absolute control. In other words, no one is able to estimate accurately the effect of improvement in the pulmonary lesion on the endobronchial disease, and, even if this could be roughly determined, we should need identical bilateral lesions in a single patient. Then one side could be treated and the other side reserved as a control. However, we have learned much in the last ten years about the treatment of endobronchial tuberculosis, and once the term "cure" is defined we are practically all in agreement.

If one is overenthusiastic about the broncho-

scopic therapy of endobronchial tuberculosis, a "cure" may mean that the operator can no longer see the ulcer or granulation tissue that characterized the acute phase of the disease. We have all treated acute disease in the stem bronchus and watched it disappear around the corner, as it were, of the upper lobe of the bronchus. To use the term loosely, we have then "cured" the endobronchial disease, at least all one can see. Sometimes the upper lobe orifice is never seen because the ulcer is replaced by a fibrostenotic lesion which forbids the passage of the bronchoscope. Yet few of us would consider this in itself a "cure." On the other hand, we frequently examine a patient with a bronchoscope for the first time and find a fibrostenotic lesion of the stem bronchus. This is often sighted as evidence of a "spontaneous cure," and the endobronchial disease is said to be "self-limited." In one hospital, I recently examined 10 patients in succession with a bronchoscope for the first time. Two had endobronchial disease in the acute phase, and 8 had a fibrostenotic lesion. All 10 had a positive sputum. We are hardly justified in speaking of such results as endobronchial "cures." Fibrostenosis is not a "cure" in itself. It is a catastrophe which should not be allowed to happen until the pulmonary lesion is controlled. For the acute bronchial lesion to proceed to the fibrostenotic stage in the presence of active pulmonary disease is proof of the greater healing potentialities (in general) of the bronchus in comparison with that of the lung. This unfortunate occurrence is contrary to good practice. Bronchial lesions should not get well in spite of the pulmonary lesion. Adequate therapy directed at the pulmonary lesion should be so established that the two phases of the same disease get well simultaneously. The best

results and the real "cures" will be attained when the bronchoscopist and phthisiologist work hand in hand toward the mutual benefit of the patient.

Endobronchial tuberculosis in many cases responds in a most dramatic way. Dr Kernan's results are so good that I am sure he will agree with me that it is unusual for patients with acute disease to show no improvement after one or two bronchoscopic treatments (20 per cent silver nitrate). When such resistance is encountered I immediately suspect that the therapy directed at the pulmonary lesion is inadequate and should be changed. This should not be considered an admission that bronchoscopic therapy is valueless. It is only valueless in this case at this moment. I say "at this moment" because Dr Kernan has reported cases responding to the mercury vapor lamp which failed under silver nitrate. I should expect that improvement in the pulmonary lesion occurred simultaneously, perhaps due to a change in the adopted therapy. Though occasionally no improvement occurs as a result of treatment, much needed information is obtained. Each failure is a warning signal or index to the status of the pulmonary lesion. If the patient is on bed rest, collapse therapy may be indicated immediately. If an ineffective type of collapse therapy is in process, it should be converted into an effective one. The bronchoscopist may be, therefore, the first to realize the slight imbalance in favor of the disease, and it seems to me that the "bronchoscopic eye" and its "therapeutic test" is no less important in one's clinical evaluation of the patient than the temperature sheet or the weight chart. All patients with endobronchial disease in the acute phase should be given the advantages of bronchoscopic evaluation and treatment.

#### A DOCTOR'S REVENGE

There is a story about a French poodle of which James Abbott McNeil Whistler, the artist, was extravagantly fond, relates the *Philadelphia Evening Bulletin*.

This poodle was seized with an affection of the throat, and Whistler had the audacity to send for the great throat specialist, Sir Morell Mackenzie. The latter, when he discovered that he had been called to treat a dog, didn't like it much, but he said nothing. He prescribed, pocketed a big fee, and drove away.

The next day Dr Mackenzie sent post-haste for Whistler, who, thinking he was summoned on some matter connected with his beloved dog, dropped his work and rushed like the wind to the Mackenzie home. On his arrival Sir Morell said gravely

"How do you do, Mr Whistler? I wanted to see you about having my front door painted!"

#### A NEW DIVISION OF CHEMOTHERAPY

To facilitate research regarding new sulfanilamide products and new synthetic drugs with antimalarial properties to make the United States independent of the Dutch East Indies quinine supply and in order to extend work relating to opium and morphine derivatives and various studies relating to aging and nutrition, a new division has been set up in the National Institute of Health of the United States Public Health Service, Dr L. R. Thompson, director of the Institute, announces. The new unit will be known as the Division of Chemotherapy and will be headed by Surgeon W. H. Sehrell. National defense demands relating to synthetic drugs that may be needed to supplement present supplies of opiates and quinine have prompted this measure. Nutrition studies now being made are centering around the vitamin B complex.

# THE CLINICAL COURSE IN VENTRICULAR ANEURYSM

HARRY GROSS, M D , and J B SCHWEDDEL, M D , New York City

THE presence of ventricular aneurysm is frequently suspected on clinical grounds. In a previous paper<sup>1</sup> we summarized the findings of a correlative study of the x-ray and necropsy findings in 81 cases of ventricular aneurysm. All were associated with myocardial infarction due to coronary artery disease. Our purpose in this paper is, first, to review the clinical data in 43 cases of ventricular aneurysm, second, to compare these data with the usual findings in arteriosclerotic and hypertensive heart disease, unassociated with ventricular aneurysm, and third, to add additional diagnostic criteria, if possible.

All the cases were observed clinically over a period of years and confirmed by necropsy. The pertinent facts are summarized below.

There were 6 women and 37 men. The ages of the women ranged from 65 to 79, the ages of the men from 41 to 75. Two were under 50, 15 were between 50 and 60, 17 were between 61 and 70, and 2 were over 70. The preponderant occurrence of ventricular aneurysm is in the sixties. It is interesting to note that despite the fact that hypertension is more common in women and that it hastens the tempo of arteriosclerosis, myomalacia cordis, which occurs most commonly in association with hypertension, is, nevertheless, more severe and runs its course sooner in men. It is, however, well known that men are more frequently subject to coronary disease and myocardial infarction than women.

The duration of symptoms in the known cases ranged from six months to nine years: up to six months, 2, six to twelve months, 4, one to one and one-half years, 5, one and one-half to two years, 4, two to three years, 6, three to five years, 10, five or more years, 6, duration unknown, 6, total cases, 43.

The onset with angina occurred in 25 instances. No attempt was made to determine the association of angina pectoris with cardiac infarction, since the electrocardiogram of transitory attacks may simulate that of cardiac infarction and also since cardiac infarction may occur without cardiographic changes or pain.<sup>2</sup> Anginal pain lasted from six months to nine years. In 13 cases the anginal onset and failure coincided. The occurrence of

failure with angina makes it likely that cardiac infarction took place at such a time.

In 6 cases the onset was with dyspnea, in 4 cases paroxysmal dyspnea was the dominant symptom at the start. One had pulmonary edema and 3 had congestive failure at the onset. In 4 others in which there were no symptoms referable to the heart, the diagnosis of ventricular aneurysm was made only at the postmortem examination. Three of these were associated with malignancies and 1 with tuberculosis.

Paroxysmal nocturnal dyspnea and pulmonary edema were regarded as congestive failure and were present in 16 patients. These symptoms lasted from three months to six years. In 5 cases paroxysmal dyspnea or pulmonary edema persistently recurred throughout the entire course, lasting six years, three years, two years, one year, and eight months, respectively. With but 1 exception there was objective congestive failure in every case of paroxysmal dyspnea or pulmonary edema.

Congestive failure lasted from six months to seven years. In 5 cases congestive failure lasted less than six months, 5, from six to twelve months, 3, from one to one and one-half years, 4, from one and one-half to two years, 8, from two to three years, 5, from three to five years, and 3, for more than five years.

Hypertension was known or could be assumed from the heart weight in 35 of the 43 cases. In 4 cases a heart weight of over 400 but less than 500 Gm was not enough to establish or definitely exclude pre-existing hypertension. The association of coronary artery disease with hypertension and the role of high blood pressure in cardiac enlargement are well established. In the absence of valvular deficiency or renal disease, cardiac enlargement may be attributed to hypertension,<sup>3</sup> with few exceptions.

Electrocardiograms were available in 29 cases, with results shown in Table 1.

A correlation between the electrocardiographic findings and the site of myocardial infarction was possible, but no correlation existed between the electrocardiographic findings and the anatomic site of ventricular aneurysm. In 5 instances a fall in voltage was observed, in 5 others it was already pres-

From the Medical Service of Dr. L. Lichtwitz and the Radiological Service of Dr. A. J. Bendick, Montefiore Hospital.

ent on admission. Such drop in voltage, as well as the superimposition of abnormal rhythms, is less characteristic of ventricular aneurysm than of heart muscle damage incidental to the underlying etiology of the heart disease.

The single positive finding is the comparative frequency of right axis deviation.<sup>4</sup> Three developed a shift from left axis to right axis deviation. Three already had a right axis deviation when first seen. This comparative frequency (6 out of 29 cases) of right axis deviation may possibly be due to the enlargement of the right ventricle as a result of congestive heart failure. Aside from the relatively frequent occurrence (21 per cent) of right axis deviation, the electrocardiographic findings were those commonly encountered in hypertensive heart disease or those associated with extensive myocardial damage. Therefore, it is evident that no typical electrocardiographic evidence exists for ventricular aneurysm.

The overwhelming majority of the cases examined had greatly enlarged hearts, and the occurrence of hearts weighing 600 to 900 Gm. was very common. One heart weighed 1,100 Gm. Twelve weighed 450 Gm. or less, eight, 400 Gm. or less, the average heart weight was 555 Gm. No correlation was found between the occurrence of aneurysm and the heart weight. The bulge did not appear to contribute to the increase in heart weight.

## Discussion

A disparity characterized by a large apical impulse and disproportionately poor heart sounds is a clinical sign of ventricular aneurysm. The diagnosis was suspected on this basis several times. On a number of occasions when the diagnosis was made on the basis of this disparity, ventricular aneurysm was not found. The value of this sign was therefore of limited import.

The sites of ventricular aneurysm have been noted in Table 2. No correlation was found between the site of the vascular lesion and the location of myocardial infarcts, nor with the actual site of ventricular aneurysm. Vascular disease ranged from sclerosis of one major coronary artery to occlusion of every major coronary artery. In 1 unusual case, myocardial infarction and ventricular aneurysm occurred in the absence of coronary artery closure or even marked sclerosis.

In each of 4 instances there were 2 aneurysms. In 2, a high posterior aneurysm of the left ventricle was found along with an aneu-

TABLE 1

	No. of Cases
Left axis deviation	24
Low voltage	10
Bundle-branch block	6
Intraventricular conduction disturbance	5
Q <sub>1</sub> , Q <sub>2</sub> pattern	1
Q <sub>1</sub> , Q <sub>2</sub> , T <sub>1</sub> , T <sub>2</sub> pattern	7
Q <sub>2</sub> , Q <sub>3</sub> or Q <sub>3</sub> alone	4
Absence of initial positive deflection	1
T <sub>1</sub> negative	1
T <sub>1</sub> , T <sub>2</sub> negative	8
Changes in Electrocardiograms	
1 Left axis deviation to low voltage	11
2 Left axis deviation to Q <sub>1</sub> , Q <sub>2</sub> (QS) <sub>1</sub>	1
3 Left axis deviation to low voltage, bundle-branch block	11
4 Left axis deviation to left axis deviation with added auricular fibrillation	1
5 Left axis deviation to left axis deviation with added nodal rhythm	1
6 No axis deviation Q <sub>1</sub> , Q <sub>2</sub> , T <sub>1</sub> negative to left axis deviation with disappearance of Q <sub>1</sub> , Q <sub>2</sub>	1
7 Left axis deviation to right axis deviation	2
8 No axis to left axis deviation to right axis deviation	1
9 Right axis deviation	3

rysm in the diaphragmatic portion of the right ventricle. Two others had both aneurysms in the left ventricle involving the upper portion of the posterior surface and the lower portion of the lateral wall.

In 13, the size of the aneurysm was known. The smallest measured 7 sq. cm. (diameter 3 cm.). The largest was 7 by 15 cm. Both the largest and the smallest aneurysms were in hearts from hypertensive cases. No correlation was found between increased heart weight and the site or size of ventricular aneurysm.

The mechanism of bulge formation is known. A bulge is a local evagination of a segment of the ventricular wall. Myocardial infarction when healed results in fibrous replacement and thinning of the ventricular wall. Before the fibrotic replacement is extensive, rupture of the ventricle may occur. Our cases represent the healed stages in which the bulge is formed by a fibrous scar replacing this portion of heart muscle. No instances of rupture occurred in our patients, and we know of none in the literature. The resilience of the resulting scar depends upon many factors. These are the size of the area infarcted, the site of infarction, the presence or absence of intramural thrombus, calcification, pericardial adhesions, and the supportive effect of the surrounding structures. It is obvious that an area of myocardial infarction must be at least a certain size before its surrounding structure will allow it to bulge. Large areas of myocardial infarction are therefore more prone to bulge formation than small ones.

An important factor in bulge formation is

TABLE 2

Case	Heart Weight, Grams	Electrocardiogram	Aneurysmal Site	Aneurysmal Size	Blood Pressure
MES	470	L A D	low ant	0	140/80 ?
GN	550	L A D and I C D	high post.	0	170/88 H
SW	—	L A D	low lat	0	160 H
HBH	590	L A D B B B low voltage	high post	3	124/80 H
AP	650	L A D B B B	low lat.	0	175/120 H
ML	600	L A D B B B	high post l. v	0	120/100 H
JG	630	L A D B B B low voltage Q <sub>1</sub> , Q <sub>2</sub>	low lat.	0	150/110 H
WF	400	L A D T <sub>1</sub> , T <sub>2</sub>	low lat	3	170/110 H
EH	800	L A D T <sub>1</sub> , T <sub>2</sub>	high post	0	184/106 H
FR	320	L A D T <sub>1</sub> , T <sub>2</sub> low voltage small R <sub>1</sub>	high post	0	176/78 H
JB	740	L A D Q <sub>1</sub> , Q <sub>2</sub> , T <sub>1</sub> , T <sub>2</sub>	high post l 1	0	160/104 H
MS	410	L A D T <sub>1</sub> , Q <sub>1</sub> change to B B B low voltage	low ant	0	170/100 H
SR	400	L A D T <sub>1</sub> , T <sub>2</sub> low voltage PR interval .24, low voltage	high post	0	108/72 ?
MR	550	L A D T <sub>1</sub> , T <sub>2</sub> , Q <sub>1</sub> , Q <sub>2</sub> low voltage	low ant	0	160/110 H
HS	500	L A D Q <sub>1</sub> , Q <sub>2</sub> , T <sub>1</sub> , T <sub>2</sub>	high post	0	110/85 H
JB	1,100	L A D Q <sub>1</sub> , Q <sub>2</sub> , Q <sub>3</sub> , RT elevation, changed to Q <sub>1</sub> , Q <sub>2</sub> , Q <sub>3</sub> , B B B	low lat	0	130/85 H
MG	500	L A D B B B Q <sub>1</sub> , Q <sub>2</sub> , T <sub>1</sub> , T <sub>2</sub> low voltage	low lat	0	84/60 H
HK	600	L A D T <sub>1</sub> , T <sub>2</sub> low voltage changed to B B B low voltage	low lat		124/90 H
PP	600	L A D Q <sub>1</sub> , Q <sub>2</sub> , T <sub>1</sub> changed to L A D, disappearance of Q <sub>1</sub> , Q <sub>2</sub> , I C D	low lat		160/100 H
MES	690	R A D B B B low voltage	ent post wall	2 X 4	142/102 H
DR	850	B B B T <sub>1</sub> , T <sub>2</sub>	{ l. v high post. } { r v diaphragm }		160/120 H
MS	650	L A D T <sub>1</sub> , T <sub>2</sub> changed to A F I C D	high post 6 cm		230/108 H
DG	550	L A D T <sub>1</sub> , T <sub>2</sub> changed to R A D Q <sub>3</sub> , T <sub>1</sub>	high post.	0	170/108 H
LN	400	L A D changed to R A D low voltage, Q <sub>1</sub> changed to Q <sub>1</sub> , Q <sub>2</sub> , A F I C D	low post	0	152/100 H
GAW	350	L A D I C D Q <sub>3</sub>	low lat	0	110/80 N
BP	680	Low voltage, Q <sub>1</sub> Q <sub>2</sub> , L A D	low lat.	3 cm.	190/110 H
HR	500	R A D Q <sub>3</sub> , T <sub>2</sub> changed to low voltage, T <sub>1</sub>	low lat.		184/120 H
YB	780	R A D A F Q <sub>3</sub> Q <sub>1</sub> absent (old terminology)	low ant.	5 cm	120/180 H
AM	840	No axis T <sub>1</sub> , T <sub>2</sub> , Q <sub>1</sub> I C D changed to L A D Q <sub>3</sub> Q <sub>2</sub> low voltage changed to R A D	low lat.	3 5 cm	150/90 H
SB	450		low lat	2 8 cm	84/64 ?
ED	540		low ant	0	154/90 H
GF	500		high post	3 cm	190/100 H
AS	415		low ant	0	160/100 H
HCS			low post	0	180/70 H
IM	500		low ant	0	100/00 N
JS	300		high post	0	90/00 H
NJ	530		low lat.	0	140/95 H
JB	600		low post	0	110/0 H
MC	500		low lat.	0	134/68 H
HI	440		low post	4 cm.	100/75 ?
AS	250		low post	0	90/60 N
SB	350		low ant	calc apex	108/60 N
AF	700		low ant.	7 X 15	95/65 H

## 43 cases

- I C D = Intraventricular conduction disturbance  
 A F = Auricular fibrillation.  
 B B B = Bundle-branch block.  
 Q<sub>1</sub>, Q<sub>2</sub>, Q<sub>3</sub> = presence of significant Q waves  
 L A D = Left axis deviation.  
 R A D = Right axis deviation.  
 T<sub>1</sub>, T<sub>2</sub> = significant abnormalities of T waves  
 N = nonhypertensive  
 H = hypertensive  
 ? = presumably hypertensive  
 0 = no record available, under EKG  
 0 = size not stated, under aneurysmal size.

muscular strain or work Sutton and Davis<sup>6</sup> showed experimentally that soon after coronary occlusion animals forced to work developed ventricular aneurysm, whereas the hearts of animals spared such effort healed without the development of ventricular aneurysms

It is possible that in humans increased intraventricular tension associated with effort plays a role in bulge formation. Even normal tension may conceivably be excessive, especially if the area is large and the wall thin. Added tension incidental to effort during the early phases of healing after

myocardial infarction must be borne in mind as an additional contributory factor to bulge formation.

The difference between intraventricular pressure within the right and left ventricles probably accounts for the more frequent development of aneurysm in the left ventricle. The support of the diaphragm probably accounts for the very infrequent involvement of the diaphragmatic portion of the right ventricle. While ventricular aneurysms may increase the size of the heart, such enlargement in our experience is not generalized but localized. It is our opinion that generalized car-

diac enlargement not attributable to other causes is due to hypertension or antecedent hypertension

The radiographic findings have been discussed in a previous paper.<sup>1</sup> In the examination, fluoroscopy is of more value than the use of films. The most important single criterion is the presence of a bulge. This may occur anywhere in the contour of the left ventricle, be it lateral, anterior, posterior, high, or low. At times, deep inspiration will reveal a bulge below the level of the dome of the diaphragm. A bulge in the cardiophrenic region is very difficult to recognize but may be identified by careful inspection during deep inspiration. A lateral bulge will produce few difficulties if the left ventricle is correctly identified by carefully noting the point of junction of opposite pulsations. A bulge of the posterior wall is somewhat more difficult to identify within the structures of the posterior mediastinum. Careful examination in such cases may reveal a bulge breaking the contour of the posterior surface so that a correct diagnosis may be made.

A definite incisura or angulation between the site of the bulge and the uninvolved portion of the ventricle is observed occasionally. Increase in density and pericardial adhesions frequently serve to identify the site of an aneurysm. Increase in density is attributed to intraventricular thrombus, occasionally with added calcific deposition. An important group virtually impossible to diagnose is that in which so massive a portion of the left ventricle is involved that there is enlargement of the entire lateral wall simulating other types of enlargement of the left ventricle.

Within the past few years considerable significance has been attached to the pulsations of the ventricular wall in cardiac infarction and in ventricular aneurysm. Some stress has been placed upon the contrapulsile nature of the pulsations, especially in ventricular aneurysm. Our findings and those of others, whose reports we summarized in a previous paper, do not lead to an identical conclusion. The pulsations may be strong or weak, synchronous or asynchronous, systolic or contrapulsile. However, in the majority of instances, asynchronicity with contrapulsile pulsations is present

In all but 1 patient, chronic congestive failure lasted from six months to nine years. In addition to clear evidence of water retention, we regarded paroxysmal dyspnea and pulmonary edema as evidences of congestive heart failure. Using these criteria, the vast majority of the cases had chronic congestive heart failure of long duration. Neither the frequency nor the severity of the clinical attacks of failure or the duration of symptoms varied from hypertensive heart failure unassociated with ventricular bulge.

While cardiac hypertrophy was the single significant feature of both the hypertensive hearts and the hearts in congestive heart failure, there was no exact correlation between the heart weight and the duration of failure. In the symptomless cases and those without congestive failure there was notably little cardiac hypertrophy.

Ventricular aneurysm made the clinical course neither shorter nor more severe. It is evident that the clinical course of heart failure in these cases is that of failure in hypertensive heart disease, and in those without failure, that of arteriosclerotic heart disease.

### Summary and Conclusions

1 The clinical and radiographic findings in 43 cases of ventricular aneurysm are reviewed.

2 The clinical course was that of hypertensive or arteriosclerotic heart disease.

3 Ventricular aneurysm appeared in no way to alter the clinical course.

4 The formation of ventricular bulge is probably the result of increase of intraventricular pressure incidental to physical effort or even normal intraventricular pressure in a diseased, thinned-out ventricle.

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### A REAL EXAM

Diner "I beg your pardon, but why do all these girls stare at me?"

Waitress "I'm not supposed to tell you, sir, but we got some of our food from the school of

cooking and home economics, next door, and if you get sick after that omelet you've just eaten, those girls have all failed in their examination."

—*Illinois Medical Journal*

# Case Report

## TERAS ANADIDYMUS

MILTON G. POTTER, M D , F A C S , Buffalo, New York

THIS unusual case occurred several years ago in the home of an Italian family.

The patient, aged 34 years, had always been in good health. Menstruation started at the age of 13 and was regular. Her first baby was lost during delivery by a midwife. Another died at the age of 17 months, cause unknown. She had six living children, but there was no previous history of twins. The family history was not remarkable, both parents were alive and well (father was 75 years old and mother, 70 years old). Her two sisters and four brothers were also alive and well, but two brothers and one sister died in early childhood. The husband's family history was not remarkable. One sister had had twins.

According to her physician, Dr. Oscar Stover, the patient, during the prenatal period, claimed she felt different during this pregnancy. She complained of a heavy feeling and was unable to do her work as easily as before. Her abdomen was much larger.

The first stage of labor was uneventful and the attending physician diagnosed the presentation as a frank breech and proceeded under an anesthetic to convert it into a double footling. The body of the child was unusually large and some difficulty was experienced in the extraction

of the legs. Delivery of the body was only partially successful because of some unknown obstruction, and consultation was sought.

The consultant's first impression was a twin pregnancy, because he was able to feel externally two heads. Upon further examination no second body could be discovered.

By means of a curved sharp hook one of the heads was severed, and extraction of the baby was effected. No difficulty was encountered in the delivery of the severed head. The mother made an uneventful recovery.

At the autopsy, this baby weighed fourteen pounds and had two normal-sized heads (see Figs 1 and 2). In addition there were found two spinal columns, two pairs of lungs, two hearts, two stomachs, two livers, two gallbladders, two esophagi, two spleens, one pancreas, one set of pelvic organs, two duodenum which fused together into a single intestinal tract. One set of the organs was very much better developed than the other.

Perhaps the most interesting finding in this autopsy was the discovery of the two hearts within one pericardial sac. This finding should be of interest to the embryologists.

186 Chapin Parkway



FIG 1



FIG 2

# Therapeutics

## CONFERENCES ON THERAPY

THESE are stenographic reports, slightly edited, of conferences by the members of the Departments of Pharmacology and of Medicine of Cornell University Medical College and the New York Hospital, with collaboration of other departments and institutions. The questions and discussions involve participation by members of the staff of the college and hospital, students, and visitors. This conference was presented before the General Scientific Meetings of the American Medical Association, New York, June 10, 1940. The next report will appear in the April 1 issue and will concern "Treatment of Rheumatoid Arthritis."

### Digitalis in Heart Failure

DR EUGENE F DUBOIS. Today we have selected a drug and a condition with which you are all familiar. We shall limit the discussion to the use of digitalis in heart failure.

We try to use the pronunciation "digitālis" but often revert to "digitāls" or "digitāls." It makes little difference which is used. The variation in pronunciation mirrors well the variability in the strength of the drug.

First I shall ask Dr. Walter L. Niles, who has been practicing medicine and teaching students in New York for about thirty years, to give the clinical aspects of the use of digitalis.

Dr. Niles, are you a heart specialist?

DR. WALTER L. NILES. No, Dr. DuBois.

DR. DUBOIS. Then you are the man we want. We do not need a heart specialist for this purpose.

DR. NILES. I believe that every doctor should be trained so that he can intelligently treat patients with heart disease. He does not have to be a heart specialist.

Digitalis is the most effective drug that we possess in the treatment of heart disease, and every physician should be thoroughly familiar with its use. Although William Withering called attention to its value in 1785, it was not until early in the present century that its use became widespread, in large part due to the observations and teachings of Sir James Mackenzie.

Let me mention a few general principles for using digitalis.

In each case enough of the drug must be given to produce digitalization. This is manifested by improvement in the circulation or by toxic symptoms.

The aim should be to secure better circulation without producing toxic symptoms. When neither improvement in the circulation

nor toxic manifestations have developed, it is usually because of insufficient dosage. That is our experience as patients come into the hospital. Few of them have had enough of the drug to produce effective results.

There is a direct relationship between body weight and the dosage of digitalis, although other factors such as the rate of absorption modify it somewhat. The body weight, therefore, serves as a useful guide for effective dosage.

When desired, as in cases with advanced congestive heart failure, the full therapeutic effect of digitalis may be secured within twenty-four hours. The method is first to estimate the theoretic requirement of the patient. Then give one-half the estimated dose. After six hours give one-quarter of the estimated dose and divide the remaining quarter into three doses to be given at four-hour intervals. That is, if you estimate that a patient requires 30 grains of powdered leaves, first give him 15 grains, after six hours give him 7½ grains and divide the remaining dose into three to be given at four-hour intervals. In this way you can watch carefully the development of toxic manifestations, and if they arise—and this is very unusual—before the complete dosage has been administered, it may be stopped. One will seldom, if ever, get into serious trouble following this routine.

It is important before giving any digitalis to ascertain whether the patient has had any of the drug within the past week or two. If so, modify the dosage accordingly and exercise great caution in attempting rapid digitalization.

Following the body-weight method of calculating the dosage of digitalis, we find that a patient of medium size—say about 150 pounds—would require approximately 30 grains of powdered leaf. A small-sized adult

patient would require about 26 grains of powdered leaf, but a large person would need 34 grains or possibly more

About 3 grains of digitalis will be eliminated from the body daily. A certain amount must be accumulated in the body before a therapeutic effect will be obtained. Therefore, to obtain such an effect the rate of ingestion must be faster than the rate of elimination. When the therapeutic effect has been secured, a certain amount of digitalis, about 3 grains daily, must be given in order to maintain the effect.

The best method of giving digitalis is by mouth. It is rarely necessary or advisable to administer it otherwise. Digitalis does not produce vomiting except as a toxic symptom, in which case the optimum effect of the digitalis on the circulation has already been secured.

The only preparation of digitalis used in our clinic for oral administration is the powdered leaves, put up in tablets or capsules. We arrived at this decision after long study and many trials with other preparations.

In rare cases when the patient cannot swallow or when vomiting persists from causes other than digitalis therapy, the digitalis may be given by rectum. The dosage is about the same and absorption is about as rapid as when given by mouth. The standardized tincture of digitalis is used, diluted in 2 or 3 ounces of normal saline solution. One drachm, or 60 minims or 4 cc, equals 6 grains of powdered leaf. Therefore, the average-sized patient, weighing 150 pounds, would require about 5 drachms of the tincture of digitalis, which is the equivalent of 30 grains of powdered leaves.

The tincture must always be measured in a glass. It should not be measured by the drop. If you try it out, you will be surprised to find that 30 drops of the tincture will actually amount to only 10 or 15 minims as measured in the glass.

In cases of emergency I prefer to use ouabain (crystallized strophanthum) intravenously. An initial effect may develop within five minutes and the maximum effect will occur within forty-five minutes. It is dangerous to use ouabain if the patient has had digitalis within about two weeks. If the patient has not been given digitalis within two weeks, inject  $\frac{1}{100}$  grain into a vein. If there is no improvement in the circulation after forty-five minutes have elapsed, repeat the dose. Never give more than  $\frac{1}{100}$  grain of ouabain

within twenty-four hours. The effect passes off within five days.

Optimum digitalization is the state in which the patient's circulation is most efficient. This varies considerably in different patients, and it can be attained only by prolonged observation and by trial. Patients usually do best with the ventricular rate between 70 and 80. However, some are better with a rate between 50 and 60, while some are at their best with a rate around 90.

The chief indication for digitalis therapy is heart failure, with or without auricular fibrillation, with or without flutter, with or without heart block.

Digitalis should not be used in preparation for surgical operations unless congestive failure exists. It should not be used in surgical or traumatic shock, in collapse during anesthesia, in the treatment of infectious diseases such as pneumonia or diphtheria, etc, or in neurocirculatory asthenia. A great deal of digitalis is wasted on patients of this class.

The only contraindication for the use of digitalis is the absence of heart failure.

Suppose a typical example of congestive heart failure comes into the hospital: a young man who gives a previous history of rheumatic fever, who obviously has mitral disease, and whose heart is in auricular fibrillation. He has orthopnea and congestion at the bases of the lung and fluid in the pleural cavity, right or left, his liver is swollen, and he has marked edema of the lower extremities.

I would say the first thing to do with such a patient is to put him in bed and make him just as comfortable as possible.

The next thing to do is to give him a dose of morphine. If he is a medium-sized patient, probably  $\frac{1}{4}$  grain. His fluids should be limited to 1,500 cc daily, and his diet should, of course, be light and simple. He won't want much anyhow.

Then begin at once the administration of digitalis. If you are using powdered leaves, as I think you ought to, give the man (weighing 160 pounds) 15 grains, in six hours give him  $7\frac{1}{2}$  grains and then divide the remaining  $7\frac{1}{2}$  grains into approximately three doses to be given at four-hour intervals. If he develops signs of digitalis intoxication, of which the most obvious is vomiting, then stop before the total amount has been given.

DR DuBois. Our chief object in these conferences is to make the practical work scientific and the scientific work practical. Next I am going to call on the pharmacolo-

gists We have two here in this session The first, Dr Cattell, will speak on the physiologic aspects of digitalis

DR McKEEN CATTELL In discussing the physiologic background underlying the action of digitalis in congestive heart failure I wish to stress two points—two well-established observations that are fundamental to our understanding of the mechanism of digitalis action.

The first is The work done by a muscle is related to its length A stretched muscle releases more energy than a shorter muscle This is a general rule applicable to all types of muscle and was applied to the heart by Starling, in which connection it is known as Starling's law of the heart It represents the mechanism by which the energy of the heart beat is adjusted to the needs of the body Whenever the venous return is increased—as, for example, following exercise—the pressure rises and the diastolic fiber length is increased The stronger contraction which automatically follows takes care of the extra blood

The same changes occur in weakness of cardiac muscle due to damage from any cause Incomplete emptying is followed by an accumulation of blood and an increased venous pressure The diastolic size of the heart increases and the longer muscle responds with a more forceful contraction. As failure increases, the limits of compensation may be exceeded and the various signs of circulatory failure become manifest

This leads to the important conclusion that the dilated heart of congestive heart failure is not of itself a deleterious phenomenon, rather it represents the means by which the organ adapts itself to an unfavorable situation The same thing holds for the increased venous pressure and the rapid heart rate They are changes tending to correct any disparity between cardiac output and circulatory needs of the body

Where does digitalis enter this picture? That question brings me to the second point I wish to stress Digitalis has a direct action on cardiac muscle which causes it to contract with greater force This was demonstrated by Cushny more than forty years ago and has since been confirmed by many investigators In our laboratory we have been able to show that isolated mammalian cardiac muscle, driven at a constant rate and maintained at a constant length, exhibits an increased force of contraction under the influence of digitalis Thus, independently of any secondary factors such as changes in length, changes in rate, or

nervous or circulatory influences, digitalis results in an increased force of contraction which must be due to a primary action on cardiac muscle I need only ask you to consider the consequence of this action in relation to Starling's law of the heart As the result of the augmented cardiac contraction produced by digitalis, it follows from well-established physiologic principles that the heart rate should slow, the diastolic size decrease, and the venous pressure fall Thus the changes associated with failure subside

It is an interesting commentary that in spite of the facts just related several alternative explanations for the action of digitalis are held at the present time These place the primary action on one or another of the prominent symptoms of congestive failure Thus, some believe that the primary action is to slow the heart, others that it is to reduce the venous pressure by constricting the hepatic veins, and still others that it is to shorten the muscle to a more favorable length It is not possible to review these theories at this time, but it may be stated that the evidence in their support is indirect, and it is clear that the subsidence of these symptoms should follow the improvement in muscle function so characteristic of digitalis action

With regard to the mechanism by which digitalis acts on cardiac muscle to improve the force of contraction we have very little exact information It is a problem of fundamental interest and one on which considerable work is being done at the present time On the papillary muscle of the cat's heart we have found ouabain and digitoxin to be effective in concentrations as low as 1 part in 100,000,000 It is safe to conclude that such a high degree of potency represents an action on the surface of the cell An effect of digitalis which we have been able to demonstrate in our laboratory is the diffusion of potassium outward from the cell Whether this has any relation to its therapeutic action must await further investigation Dr Visscher and his associates at Minnesota have reported interesting experiments in which the changes in efficiency have been studied in the heart-lung preparation of the dog As cardiac failure progresses, there is a decrease in the work done per unit of oxygen consumed—that is, there is a fall in the efficiency of contraction in a mechanical sense When digitalis is added to the perfusing fluid, the heart does more work and it does so without a corresponding increase in the oxygen consumption Thus, digitalis results in improvement in the efficiency at

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Then begin at once the administration of digitalis. If you are using powdered leaves, as I think you ought to, give the man (weighing 150 pounds) 15 grains, in six hours give him  $7\frac{1}{2}$  grains and then divide the remaining  $7\frac{1}{2}$  grains into approximately three doses to be given at four-hour intervals. If he develops signs of digitalis intoxication, of which the most obvious is vomiting, then stop before the total amount has been given.

Dr DuBois. Our chief object in these conferences is to make the practical work scientific and the scientific work practical. Next I am going to call on the pharmacolo-

by oral administration as by intravenous injection I believe it is not generally appreciated that only about 10 to 20 per cent of the potent substances in digitalis leaf or the tincture is absorbed from the gastrointestinal tract, whereas in a similar period practically 100 per cent of the dose of these materials is absorbed from the gastrointestinal tract

It requires only 3 cat units of "Digitaline Nativelle" to produce full digitalization by oral administration as against the usual dose of about 20 cat units of digitalis leaf or the tincture

With such materials as these I believe that we are well on the way to the development of digitalis therapy by purified glucosides which are rapidly and completely absorbed from the gastrointestinal tract, and there is an indication that these materials can be extracted from digitalis with such uniformity as to require no biologic standardization

DR DuBois We have already gathered in a good many questions I have tried to distribute them among the different speakers

QUESTION Does a cat unit of different preparations of digitalis produce the same effects in man?

DR DuBois I think that has just been answered in part by Dr Gold How is it, Dr Gold, for the various preparations of powdered leaf and tincture? Are the effects in man still proportional to the cat unit?

DR GOLD For different specimens of the same material the cat method appears to apply fairly satisfactorily One may compare one specimen of digitalis with another by the cat method, but one must not attempt to compare a purified glucoside such as digitoxin with digitalis leaf by any animal method We have evidence that the results are not likely to apply to man unless the testing is done on man directly In our recent studies we found that 1 cat unit of "Digitaline Nativelle" has the effect in man of 6 to 12 cat units of digitalis leaf

QUESTION It has been said that the tincture of digitalis should not be prescribed by "drops" Why not?

DR DuBois Dr Niles emphasized that point The drops of a tincture are very small on account of the alcoholic content It has been my experience that it takes  $2\frac{1}{2}$  to 3 drops of tincture to make 1 minum, so that there is a great deal of difference between the minum actually measured in a glass and the drop Of course, in the case of a watery solution a drop and a minum are much closer together

QUESTION In your case of decompensated rheumatic mitral disease, what will be your advice regarding digitalis when the patient leaves the hospital fully compensated—especially the dose, amount and frequency?

DR NILES I would prescribe 3 grains of digitalis leaves to be given in one dose, that is, once a day The most convenient time is after breakfast It probably should be kept up over a long time or indefinitely However, that dose might not be enough for that man or it might be too much One must find the dosage at which he feels best Many patients learn by themselves They leave out digitalis for a day or two, or when they feel a certain way they may take an extra dose on some other day, but approximately 3 grains of digitalis leaves is the average daily dose

DR DuBois There are several questions here with regard to the use of digitalis in coronary thrombosis

QUESTION Would you use digitalis or strophanthin in acute coronary occlusion (a) without heart failure and (b) with heart failure?

DR NILES My own feeling is that without heart failure one would not use digitalis I see no indications for it With heart failure in any form I certainly would give digitalis There are certain theoretic objections described in the texts, such as that the increase of strength of the ventricular contractions might produce rupture, but I think they are really unimportant Therefore, I do give digitalis to patients with coronary thrombosis provided they have any form of heart failure

QUESTION Why not use digitalis in auricular fibrillation after coronary thrombosis? When is it safe after coronary thrombosis?

DR NILES I think it is safe any time after coronary thrombosis when there is heart failure

If the patient has auricular fibrillation following coronary thrombosis and develops a rapid ventricular rate, he will almost certainly have some indications of heart failure Therefore, I would give the patient digitalis In other words, it all comes back to the question of heart failure

I think that answers all of the questions concerning the use of digitalis in coronary thrombosis

QUESTION Did Dr Cattell mean to imply that digitalis has no slowing effect on conductivity of the heart beat or on the vagus? Does not digitalis have a primary action on auriculoventricular conduction which would

which the heart carries on its work. It not only does more work but it does it more efficiently.

DR DUBOIS. By this time a good many of you have questions. I shall ask Dr Milhorat to hand out cards in case you care to write them down. We should like to have as many as possible.

Dr Harry Gold will continue the discussion of the pharmacologic aspects of digitalis preparations.

DR HARRY GOLD. I am going to confine my remarks to that aspect of the pharmacology of digitalis which has to do with the choice of preparations.

Dr Niles stated that the adult patient of average weight requires about 30 grains of digitalis to produce the full therapeutic effects. I presume he has reference to the U S P digitalis leaf.

It has been our general experience that digitalis leaf meets the requirements of digitalis therapy as satisfactorily at least as any of the specialties of digitalis in the form of extracts or mixtures for oral administration.

There are a few matters concerning digitalis leaf or the tincture, however, which require special attention because digitalis preparations show wide differences in their composition and potency. A point that is perhaps not generally known is that digitalis of the present *Pharmacopœia* is about 50 per cent stronger than digitalis of the previous *Pharmacopœia*. This means that for every 15 minims of tincture of digitalis which we prescribed prior to 1936 we now prescribe only 10 minims of the tincture, and that for every  $1\frac{1}{2}$  grains of digitalis leaf which we prescribed prior to 1936 we now prescribe only 1 grain of digitalis leaf.

The U S P digitalis is standardized by the frog method in accordance with the technic outlined in the *Pharmacopœia*. We must not assume, however, that because U S P digitalis leaf is standardized it is all of uniform potency. The *Pharmacopœia* itself allows a 40 per cent range between the weakest and the strongest preparation.

More important, perhaps, than this is the fact that digitalis preparations of commerce show a much wider range. We recently assembled a group of preparations of the most popular brands of the tincture of digitalis. We assayed them by the cat method, and we found wide variations—all the way from 0.35 cc per cat unit for the strongest preparation of the tincture to 0.96 cc per cat unit for the weakest one. The strongest preparation

is then about three times as potent as the weakest, a difference of about 300 per cent for preparations of the tincture of digitalis which are labeled U S P XI.

In the case of a patient who is seriously ill and requires rapid digitalization by very large doses, the importance of the matter is self-evident, whether the digitalis is one-third as strong or three times as strong as we expect it to be.

However, when we pursue a technic of digitalization along the lines described by Dr Niles, in which we divide the full dose into fractions, the marked variation in potency of preparations is not quite so serious because in such cases one gives more or less of the drug, being guided by the development of effects and symptoms.

I see no satisfactory solution at the present time for the difficulties of wide variations in the potency if we continue to depend on preparations of the whole digitalis leaf. We shall be better off, to be sure, if at least we keep aware of the fact that these differences in potency of preparations labeled U S P XI exist.

I might add that the New York Heart Association has solved this problem for itself by purchasing a large batch of digitalis leaf, enough to last three, four, or five years. This is physiologically assayed by the cat method and made up into tablets of varying sizes. This insures uniformity of the digitalis for at least that period of time for the sixty member clinics which take care of about 20,000 cardiac patients.

The real solution of the problem of variable potency of digitalis preparations lies in the discovery of the purified glucosides which might be obtained in crystals of uniform strength which will not require biologic standardization. During the past year we have made some studies along these lines, and the results offer considerable promise. Our experience with man is similar to that of Hatcher and others with animals and shows that digitoxin-like materials obtained from digitalis leaf possess extraordinarily valuable properties. We have now had some experience with "Digitoxin-Merck" and more with the crystalline material of the French preparation known as "Digitaine Nativelle".

These two materials, although not identical, are similar in important respects. They are absorbed from the gastrointestinal tract almost as well as a dose of strychnine or a dose of quinine. Results in animal experiments show that a dose is almost as effective

of heart failure If there is heart failure, give digitalis If there is no heart failure, do not give digitalis

It has been customary in many clinics, as it was with us, routinely to digitalize patients with pneumonia At Bellevue Hospital we carried out quite an extensive study a few years ago and found the mortality actually higher in those patients who were digitalized We no longer routinely digitalize patients with pneumonia

QUESTION If compensation occurs with bed rest, is digitalis indicated?

DR NILES I would not wait for the patient to compensate with bed rest alone I would give him digitalis

QUESTION What is the shortest time that one can safely digitalize a patient? In what manner of administration?

DR NILES One can do it in eighteen hours with perfect safety by using digitalis leaves given by mouth One may do it more quickly by using crystallized strophanthus intravenously It is seldom necessary to be in such a hurry

QUESTION What is the reason for the morphine that is given to the patient when first seen?

DR NILES It is given to the patient to make him more comfortable This in turn reduces the strain on his heart I believe

that morphine is a highly valuable adjuvant to digitalis in treating heart failure

QUESTION Is there any difference between "fat-free" digitalis and digitalis not so treated, with regard to the production of nausea and other unpleasant symptoms?

DR GOLD The answer is "No" The official tinctures of digitalis contain little fat There was a belief that the fat in digitalis was responsible for the nausea and vomiting We now know that this is not so and that nausea and vomiting generally result from the systemic action of toxic doses of the glucosides after absorption

QUESTION Is there any further indication for infusion of digitalis?

DR GOLD The answer to that is "No"

QUESTION What is the technic of digitalization with digitonin-like materials?

DR. GOLD In the case of "Digitaline Nativelle" the amount that produces full therapeutic effects is approximately 1 to 1.25 mg, and that total amount may be given at one time or it may be divided into three or four fractions, each fraction given at about three- or four-hour intervals A slower technic is to give approximately 0.25 mg every day, and in five or six days the patient is fully digitalized The same daily dose may then be continued for maintenance This applies to the average ambulant patient

## R. A JOB

The steps which lead to the establishment of a former tuberculosis patient in a job are extremely important to the patient himself, to his family, to the people with whom he will be working, and to the community at large They are important to the patient because they may determine whether or not he will live They are important to the patient's family and his future co-workers because, if his disease reactivates, he may infect them The community is vitally concerned not only from the standpoint of preventing relapses with consequent infection of others, but also from the economic aspect of protecting the thousand or more dollars it has invested in treatment of the patient—

*Quoted in Minnesota Medicine*

## THE WHY OF THE MEDICAL SOCIETY

"The well-conducted medical society should represent a clearinghouse, in which every physician of the district would receive his intellectual rating, and in which he could find out his professional assets and liabilities We doctors do not 'take stock' often enough, and are very apt to carry on our shelves stale, out-of-date goods The society helps to keep a man 'up to the times,' and enables him to refurnish his mental shop with the latest wares Rightly used, it may be a touchstone to which he can bring his experiences to the test and save him from falling into the rut of a few sequences It keeps his mind open and receptive, and counteracts that tendency to premature senility which is apt to overtake a man who lives in a routine"—Osler

## THE GANG THAT RUNS THINGS

"Ah, what's the use?" said the enthusiastic young physician. "I tried to horn in here, but only busted my horn. There is a gang that runs this medical society, and outsiders have no more show than a snake has hips!"

The past-president, to whom this remark was directed, lighted an obese cigar and spoke

"You are right, young man, and you are wrong," he said. "By this statement I mean that you are right about a 'gang' running the society. There's a 'gang' running every organi-

zation on earth. If there wasn't, there wouldn't be any organizations. On the other hand, you are wrong when you say you tried to horn in and couldn't. You did not go about it right. Any good guy who wants to horn into any gang has to know the password, and I will give it to you in strictest confidence. These words are 'What can I do to help?' Any man who will use those words will find himself as busy as a one-armed piano player with a bad case of hives!"

—*Detroit Medical News*

account for the slowing of the ventricular rate in auricular fibrillation?

DR CATTELL I am glad that question has been raised because one of the well-known actions of this group of drugs is the direct one on conduction between the auricle and ventricle, and it is undoubtedly true that when a sufficiently large dose of digitalis is given slowing of the rate may result from that cause. However, it can be shown that when the auricle is fibrillating, even when digitalized, the rate is under the control of the vagus mechanism, for the heart of patients under these conditions responds to exercise or atropine with an increase in rate. Under these circumstances there is every reason to believe that an improvement of muscle function would be followed by a slower rate, i.e., the normal physiologic response prevails. That is the case with ordinary therapeutic doses, but with larger doses the direct effect on conduction plays a large part. This is proved by the use of atropine, as in Dr Gold's recent studies, which loses most of its effect on the heart rate when sufficiently large doses of digitalis are given.

QUESTION Dr Niles states that 3 grains of digitalis daily is necessary to keep a patient digitalized. We have been taught that  $1\frac{1}{2}$  grains only is necessary. What is the reason for this discrepancy?

DR GOLD I believe that when Dr Niles spoke of 3 grains he referred to the average patient, but there are some who require less and some more. However, I think the question brings up a point of importance and related to the matter that Dr Cattell has just discussed. In one and the same patient one sometimes finds that  $1\frac{1}{2}$  grains or 3 grains seem to be equally effective in keeping the heart rate in auricular fibrillation at a given level. By way of illustration, you digitalize a patient fully with 25 grains in the first twenty-four to forty-eight hours, reducing the ventricular rate to 70 a minute. Then you give that patient  $1\frac{1}{2}$  grains daily and the rate remains at that level for months. But you might double the dose without sending the rate any lower. When the patient received  $1\frac{1}{2}$  grains daily with the rate at 70, a dose of atropine to paralyze the vagi sent the rate to 150 or 160 a minute, whereas, when the rate was maintained at 70 by 3 grains daily, the paralytic dose of atropine sent the rate only up to about 100 a minute. In the latter case the patient was much less susceptible to marked fluctuations in ventricular rate with slight effort, since the mech-

anism of slowing was one of direct action on the auriculoventricular conduction, whereas in the first instance the mechanism of slowing was through the vagus as outlined by Dr Cattell.

QUESTION Are some digitalis glucosides superior to others with regard to their action on cardiac muscle and to the incidence of toxic effects?

DR GOLD There is no convincing evidence that any digitalis glucoside is superior to any other from the standpoint of the range between the therapeutic dose and the toxic dose. Nevertheless, with a preparation that is more rapidly absorbed than another, toxic symptoms are less likely to be produced, because slow absorption and irregular absorption go hand in hand.

QUESTION How stable is the tincture of digitalis or at what age does it become worthless?

DR GOLD We have had tinctures of digitalis in the laboratory which have been standing for years, and they have retained their activity as tested by the cat method. There is a tendency for the tincture of digitalis to show a loss of activity by the frog method of assay in the course of months and sometimes years, but there is no good evidence that such tinctures are materially weaker in man.

QUESTION Do you advise digitalis in rheumatic heart disease with a high heart rate?

DR NILES Certainly not unless there are signs of heart failure.

QUESTION Is there any contraindication to digitalis usage in a failing heart following prolonged hypertension?

DR NILES Prolonged hypertension is no contraindication. There is certainly every indication for the use of digitalis from the effects of which the blood pressure will probably fall. It is surprising how well patients of this class do for long periods of time on digitalis.

QUESTION The statement was made cautioning against the use of digitalis in pneumonia. With definite, congestive heart failure complicating pneumonia, would it be better to use digitalis or wait for the finding of right heart failure at autopsy?

DR NILES That is a sort of cryptic question which demands a straight answer. If congestive heart failure complicates pneumonia one uses digitalis, of course. In fact, the sum and substance of the indications for the use of digitalis depend upon the existence

into formal commission under command of Captain L W Johnson, MC, U S Navy, on October 5 of this year, the exercises were held on a pier in the North River where the hospital-to-be was still a vast number of crates and boxes that loaded the pier to capacity. Three weeks later the hospital in boxes left New York on the Navy Transport "Henderson" for Guantánamo, Cuba. The hospital staff went with it. Besides the medical and dental officers, nurses, and hospital corpsmen, the staff included navy carpenters, machinists, plumbers, and electricians. Five days later the "Henderson" arrived at Guantánamo and started to unload. Three weeks later the staff had erected and equipped a hospital from the mass of boxes, and it was in operation. The 500 cots and beds for patients are in tents, as are the living quarters of the staff. A prefabricated wooden building houses the operating room suite. The staff mechanics constructed wooden buildings for the laboratory, x-ray department, dental offices, physical therapy department, galley, bake-shop, mess halls, and laundry. The equipment of the hospital, besides three x-ray machines and physical therapy and the usual hospital equipment, includes a 90-watt electric power plant, a refrigerating plant that can make a half ton of ice and freeze 200 quarts of ice cream daily, twenty-eight automatic kerosene-burning refrigerators, a sewage disposal plant, a water purification and filtration plant, laundry equipment, a power insecticide sprayer, and last but not least two sound, moving-picture projectors. Water storage is provided for in 16,000-gallon metal containers and in the Army-type canvas tank. To the Army we are indebted also for the new type, field ranges used in the galley. Four ambulances, five trucks, two motorcycles, and a station wagon provide transportation.

Minor mistakes in equipment and operation have been corrected. The staff has been trained and can move to another base whenever necessary. In case of mobilization for war, the fleet might find it strategically advisable to base on Trinidad, on Bermuda, or on some South American station. To that base would go the hospital. It is believed that with the experience already acquired the staff can dismantle it, put it on board ship, and reassemble it at a new base in six weeks. It is planned to construct and assemble at least one more of these base hospital units.

Portable hospital units, similar to those used by the Army, have been developed by the Navy for use with the marine expeditionary

force. Each unit comprises seventy-two hospital beds and twelve tents transported in fast, motorized ambulances. Field surgical instruments of new lightweight design will be carried.

### Personnel Preparedness

How is the medical department of the Navy prepared to care for the present navy and marine corps force of 210,000 men and "to keep as many men at as many guns as many days as possible," and how will it be prepared for a personnel expanded to nearly three times that number?

The hospital corpsmen who are our male nurses and technicians are young men carefully selected from the newly enlisted apprentice seamen at the training stations. They are sent to hospital corps schools for from four to six months and then to naval hospitals where their training is continued. As they are promoted they are given opportunities to train as laboratory, x-ray, and physical therapy technicians, etc. The increase of the hospital corps will take place as part of the regular increase of the Navy and with the addition of naval reserves.

The female nurse corps is made up of registered nurses who are graduates of recognized civilian institutions. The Reserve Corps of nurses is similarly made up, and the Red Cross is doing invaluable work in organizing it.

Doctors and dentists of the regular Navy are commissioned directly from civil life and must be under 32 years of age when commissioned. Doctors must have completed at least one year's internship, though a limited number of fourth-year students are given acting appointments, their internship in the Navy, and a commission afterward.

In normal times the newly commissioned medical officers are sent to a naval hospital for duty until the following September and are then sent to the Naval Medical School in Washington for the basic course in medicomilitary medicine. Included in this course are three weeks of chemical warfare at Edgewood Arsenal, Maryland, and three weeks of field service with the marines at Quantico, Virginia.

From that time onward opportunities are offered for continuous advancement in the way of postgraduate education. To be of full value to the service, the young officer must study and develop special qualifications and, at the same time, must take his share of rotation on ships at sea, for the mission of the

## Special Article

### MEDICAL PREPAREDNESS IN THE NAVY

CAPTAIN E C WHITE, M C , U S Navy, New York City

THE present defense policy of the United States calls for a navy that will be prepared to defend our shores on the Atlantic and on the Pacific—and even defend South America—against any enemies by whom they may be attacked. This navy is to be built up as soon as possible, for we know not how soon that attack may take place.

The present authorized building program will increase the number of battleships from fifteen to thirty-two, the aircraft carriers from six to eighteen, and approximately double the number of cruisers, destroyers, and submarines by 1946. To support this fleet of fighting craft, supply and ammunition ships, submarine and aircraft tenders, tankers, and other auxiliary ships are being constructed or are being taken over from the Merchant Marine and converted to their naval purpose.

The aviation branch is to be increased from 3,000 pilots to 22,000, with 15,000 planes. The Marine Corps is to be increased by 33 per cent to 50,000. Navy yards and training stations have already been expanded. New naval bases and air stations are being established on the mainland, in Alaska, on the islands of the Pacific, and in the West Indies. The present combined total of 210,000 Navy and Marine Corps personnel will be expanded to about 500,000.

In this preparedness program what part does the medical department play? How does it fulfill its function at present, and how will it fulfill its function in the expanded navy? Its preparedness may be divided into (1) materiel preparedness and (2) personnel preparedness.

#### Materiel Preparedness

The eighteen existing naval hospitals are being enlarged and five new ones are being constructed. The new ones are at the Naval Air stations at Jacksonville, Florida, and San Juan, Puerto Rico, the Submarine Base, Coco Solo, Canal Zone, the Naval Station, Guantánamo Bay, Cuba, and the Marine

Base, Quantico, Virginia. These all replace dispensaries and four of them are in the West Indies—Canal Zone area.

The "Hospital Ship Relief," designed and constructed as a hospital ship, was commissioned in 1919. It can accommodate 500 patients and carries a staff of medical and dental officers, nurses, and hospital corpsmen. It has served its purpose well, cruising with the fleet wherever it goes. But one hospital ship cannot adequately serve a two-ocean navy. We will need more. Last September the Navy purchased the 13-year old, 6,200-ton "Iroquois" from the Grace Line and is now converting it into a hospital ship which will be renamed the "Solace" after the first hospital ship of the American Navy. It will accommodate 438 patients, have an elevator, operating rooms, x-ray plant, and all other equipment of a first-class hospital. The "Iroquois," you may remember, got into the newspaper headlines last July on one of its last trips. It was held up by a submarine in South European waters and it was only after a lengthy argument over the radio that it was allowed to proceed. The submarine thought it was a disguised British ship, and our hospital ship-to-be came very near indeed to being sent to the bottom of the ocean.

Ambulance ships will be necessary auxiliaries, particularly if the fleet is operating at a distance from the coast bases. No ships have been or will be constructed specifically for that purpose, but the Marine Corps transports, "McCawley" and "Barnett," recently converted from Merchant Marine liners, have been so designed as to be adaptable for use as evacuation ambulance ships, each with a capacity for about 2,000 wounded. Other ambulance ships can be converted from luxury liners with relatively little work.

An interesting and rather experimental venture in the way of hospitals is the Navy Mobile Base Hospital. It is a complete hospital, so planned and organized that it may be moved from one base to another as the fleet or marine expeditionary force may change its operating base.

When Mobile Base Hospital No. 1 was put

Read before the New York County Medical Society on December 23, 1940

District medical officer of the Third Naval District

the horizon Their planes have been driven off by the planes from our aircraft carriers Retreat from general quarters is sounded All doors are opened, and the crew leave their battle stations The surgeons and their assistants return to the sick bay and operating room on the upper deck. Wounded men are redressed, emergency operations are performed, and the dead and wounded are placed on deck ready for transfer Soon hospital ships and ambulance ships come up over the horizon at full speed to meet the Battle Fleet. They have been kept well in the rear during the battle Boats are lowered, and the wounded and the dead removed from all fighting ships To the hospital ships go the most seriously wounded and those requiring immediate attention Awaiting them on board are hospital units of prominent specialists from leading civilian hospitals, besides medical officers of the Regular Navy To the ambulance ships go the rest of the wounded and the dead On those ships also are hospital units and members of the Volunteer Naval

Reserve All wounded will be well cared for

The enemy fleet has been defeated but not destroyed Our fleet may have to fight another battle in a few weeks, perhaps sooner The hospital and ambulance ships are ordered to proceed at full speed to Guantánamo Bay and Bermuda, unload, and rejoin the fleet without delay There is a new naval hospital at Guantánamo, and Mobile Base Hospital No 1 has recently been established in Bermuda At both of these hospitals members of the Volunteer Medical Reserve are on duty, standing by with their regular service associates

Later, naval transports will move the wounded and dead from these outlying hospitals to naval hospitals on the mainland There again we will find hospital units of prominent surgeons, internists, and other specialists—medical officers of the Volunteer Naval Reserve They have patriotically left behind their private practices to devote their services to their country, and they have helped to make the medical department of the Navy prepared

#### MANY VICTIMS OF BURNS COULD BE SAVED BY TRANSFUSIONS OF PLASMA PROTEIN

Of the 5,000 deaths each year in the United States attributed to the effect of severe burns, many could undoubtedly be avoided by adequate treatment by means of transfusions of plasma (fluid portion of the blood) protein, aimed at replacing the substances lost by the body in this serious type of injury, Dr Robert Elman, St Louis, declares in the *Journal of the American Medical Association* for January 18

The pessimism often expressed as to the outcome of extensive burns is fallacious, Dr Elman believes It is based "on the inference that, since large areas of skin are involved, it will be impossible to obtain a sufficient amount of normal skin for skin grafting later This idea

is often erroneous as far as the burn turns out to be first or second degree and therefore requires no skin grafting whatever It is obvious then that, if these patients could be carried over the acute stage of their disease and the general manifestations corrected, not only would lives be saved but further treatment would become unnecessary "

Dr Elman advocates that the protein lost because of severe burns be replaced by means of transfusions of plasma. Although some authors have advocated the administration of sugar and salt solutions, it is his opinion that the giving of these fluids alone in burns "is not only often ineffective but may, if excessive, be dangerous "

#### OR ICE-CREEPERS FOR THE COW-SLIPS

A young farmer went into a store to get some feed for his hogs and was waited on by a clerk, a young lady

"I want some shorts for my hogs," the farmer said.

"Oh, you're one of those smart guys," the lady clerk retorted. "Next I suppose you'll be coming in here for some brassieres for your cows."

—*Certified Mill*

#### A MANY-COLOR CAMERA

Physicians intending to add pictorial records to their case histories will be interested in the new color-flash, clinical camera which has just been perfected with the assistance of active practitioners, says the *New York Medical Week*. This camera makes pictures in color, as well as black and white, in the various body orifices, and by a method that is so simple that any doctor can do good clinical photography

Navy requires efficient medical department activities at sea

Officers who show aptitude are sent to civilian institutions for courses in various specialties, such as surgery, internal medicine, etc., or they are sent to Navy or Army schools for instruction in aviation medicine, tropical medicine, submarine medicine, or deep-sea diving. Medical officers are encouraged to become Associates and Fellows of the American College of Surgeons and American College of Physicians and to take the American Board examination in their specialty.

But in time of war or national emergency it is upon the Volunteer Naval Reserve that the medical department of the Navy must rely for a rapid increase in personnel. The Naval Reserve was established in 1916 and reorganized in 1925 and again in 1938. It includes both line and staff and is divided into two classes, the Volunteer General and the Volunteer Special. The doctors in the Volunteer General Reserve must be under 35 years of age when commissioned and may be assigned to any of the naval duties ashore or at sea to which medical officers of the Regular Navy may be assigned. In the Volunteer Special Reserve doctors who are qualified specialists are commissioned up to 50 years of age. It is the intention to use them only in their respective specialties, either as individuals or in hospital units. The usual hospital unit is made up of eight doctors, each of a different specialty, and one dentist. They will be used in naval hospitals ashore or beyond the sea or on hospital or ambulance ships.

Doctors are still being enrolled, both in the Volunteer General Reserve and in the Volunteer Special Reserve. In the General Reserve in particular there are still many vacancies for young doctors under 35 years of age. This class includes interns and residents, who are placed on a deferred list to be called to active duty only in case of emergency.

### A Nation at War

With the medical department organized and prepared in materiel and in personnel, let us see what part it will play when the nation is at war. Let us go to sea with it on one of the new 35,000-ton battleships as the fleet seeks the enemy.

The enemy fleet is sighted, general quarters is sounded on bugle, gong, and loud-speaker, officers and men rush to their battle stations, the medical department personnel leave their sick bay and beautifully equipped operating

room on one of the upper decks and hurry down to their battle dressing stations several decks below and behind the heaviest portion of the armor plate. Already equipped with portable operating tables, sterilizers, instruments, supplies, and great quantities of sterile shell and gunshot wound dressings, the battle dressing stations are soon ready for battle.

The battle begins. Enemy airplanes drop bombs on our deck, some of the shots from the enemy ships' big guns reach their target. Several of our guns are put out of action, men are killed and injured. Repair parties are rushed immediately to every point where damage is done. A hospital corpsman is a member of each party, and he supervises the first aid given to the injured, paying particular attention to those with minor injuries who may be returned immediately to their guns. The crew has been well trained to take first-aid packages from the boxes marked with a Red Cross and installed in all parts of the ship. If the injured man still bleeds after the occlusive dressing is applied, a tourniquet is put on. If he is in pain, a syrette of morphine is taken from the box and injected, and the man is so tagged. The dead are placed to one side. The battle goes on. Soon there is a lull—the enemy ship that has engaged ours is disabled. Word goes out from the commanding officer in the conning tower. Some water-tight doors are opened. Bandsmen trained as stretcher bearers and led by a well-trained hospital corpsman rush out with wire mesh stretchers, gather in the wounded, and take them down to the battle dressing stations before the firing can be resumed.

In the battle dressing stations the surgeons and their assistants are scrubbed up and ready. They operate if necessary, change dressings, remove tourniquets, and administer morphine. The dental officer and the chaplain take the names of the wounded and see that each is properly tagged with degree of seriousness and need for further urgent attention. Wounded are placed in bunks, and the dead are tagged and placed to one side in the hammock netting.

The battle is rejoined, another enemy ship is firing at us, other lulls occur in the battle. Some of the men brought to the dressing stations have been burned by mustard gas bombs dropped by enemy planes, and others were picked up from the sea—they were members of the crew of an enemy plane shot down by our anti-aircraft fire.

At last the battle is ended—the enemy ships have been sunk or disabled or have fled over

Inside the black, all-metal kit was the following inscription "Presented to our brother physicians of England in honor of Maurice J Dattlebaum, M.D., F.A.C.P., president of the Medical Society of the County of Kings and Academy of Medicine of Brooklyn, N Y, U S A., by his medical friends, January 28, 1941"

#### Monroe County

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The program was sponsored by the auxiliary, with Mrs Arthur C Martin, of Old Westbury, its president, presiding. She introduced Dr Aaron L Higgins, of Rockville Centre, president of the society, who conducted the brief business session of the men's group

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"The press announces a new Wagner health bill," he said. "Will the senator ask the help of the medical men in framing this new proposal? Or will he again look to social theorists to write his legislation for him?"

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Dr Stanton Perry Hull, 54, of Troy, who died on January 24, was a former president of the New York State Sanitary Officers' Association. He was also prominent in many local activities and in fraternal and religious organizations

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All members of the county society who may be interested are invited

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#### Westchester County

The county society met with the Westchester Society of Gastroenterology at the New York Hospital, Westchester Division, on February 18 and heard an address on "Clinical Uses of Long Intestinal Tubes," by Dr William Osler Abbott of Philadelphia

Dr Halcyon Halsted, of Pelham Manor, has been elected president of the New York Society of Industrial Physicians and Surgeons

Dr Halsted succeeds Dr Harry Van Ness Spaulding, retiring president, and Dr F Albee, former president

More than two hundred friends, patients, and professional colleagues honored Dr Henry T Kelly, of White Plains, a past-president of the county society and former editor of its *Bulletin*, at a dinner at the Westchester Country Club on January 11 in celebration of Dr Kelly's completion of forty years in practice in White Plains

Dr Kelly is chief of staff of the White Plains Hospital, and the toastmaster at the dinner was Mr John W Appel, Jr, president of the White Plains Hospital Association. Other speakers

# Medical News

## County News

### Albany County

The county society, at its meeting on January 22, heard a paper on "Surgical Treatment of Deafness," by Dr Leighton F Johnson, professor of laryngology, Boston University School of Medicine

Dr Arthur W Wright, professor of pathology and bacteriology at Albany Medical College, and William G McEwan, vice-president and secretary of the Morris Plan Industrial Bank of Albany, spoke at a "health defense" meeting at Albany Law School auditorium on February 6—one of a series sponsored by the public relations committee of Albany Hospital and Medical College in cooperation with the Albany County Medical Society and Albany Hospital Council

### Bronx County

The county society is cooperating with several other medical and health bodies in sponsoring a series of educational meetings on "The People's Food," running from January 23 to March 20 in the Mott Haven Health Center, discussing the elements of food, their functions in the body, their best sources, diseases caused by food deficiencies or excess, the prevention of these diseases, food purchasing, and budgeting

### Broome County

A motion picture in colors on "Eclampsia," by Dr Joseph B De Lee, of Chicago, was shown at the meeting of the county society on February 11 Discussion was opened by Drs S B Blakely, M A Carvalho, G R Cheatham, H I Johnston, C J Marshall, and C H Topping

The county society's radio speakers on the four Thursday evenings in February were Drs Carlton H M Goodman, Frank Paul Kane, H I Johnston, and Stuart B Blakely

The Endicott-Johnson Medical Department has invited the county society to attend its annual meeting and program on April 15

### Chautauqua County

The Jamestown Medical Society held a dinner meeting on January 30, at Hotel Jamestown, with covers for thirty Dr D C Perkins presided Guest speaker was Dr J L Reycroft, of Cleveland, assistant professor of obstetrics and gynecology at Western Reserve University, who spoke on "The Treatment of Sterility in the Female" A discussion followed

### Dutchess County

At its meeting on February 8, the county society paid tribute to the late George V L Spratt, former mayor and counsel to the society over a long period of years, in a testimonial letter to Mrs Spratt The society also honored Dr Howard P Carpenter, its secretary for 26 years, now retired, and Dr John S Wilson, member, who has been practicing fifty-four years

### Errie County

Topics and speakers at recent meetings of the Buffalo Academy of Medicine were as follows

Section of Pathology, January 29, "Pathogenesis of Tuberculous Lesions in Adults," by Dr Kornel Terplan, Buffalo

Section of Surgery, February 5, "Problems in the Surgical Treatment of Thyroid Diseases," by Dr Robert Scott Dinsmore, Cleveland

"Medical Social Work, Medical Education and Medical Service," by Dr Jean Alonzo Curran, dean and acting president, Long Island College of Medicine, was held at Hotel Statler on February 19

The annual supper dance of the Erie County Rural Medical Club was held on February 6, at the Trap and Field Club

### Kings County

Dr William C Meagher was named president-elect of the county society, to take office in January, 1942, at the annual meeting on January 21 Dr Maurice J Dattlebaum, who was chosen president-elect last year, took office at the meeting

Other officers elected for 1941 were Dr Leo S Schwartz, vice-president, Dr Thomas B Wood, secretary, Dr Benjamin M Bernstein, associate secretary, Dr Irwin E Sins, treasurer, Dr Abraham Klein, associate treasurer, Dr Jaques C Rushmore, directing librarian, and Dr Edwin P Maynard, Jr, associate directing librarian and curator

The board of trustees of which Dr John J Masterson was elected chairman, Dr Thomas A McGoldrick, vice-chairman, and Dr Augustus Harris, secretary, includes Dr Frank L Babbott and Dr Albert F R Andresen, one-year terms, Dr Harris, Dr Alexander L Louna, and Dr McGoldrick, two-year terms, Dr Charles A Anderson, Dr John B D'Albora, and Dr Masterson, three-year terms, Dr John L Bauer, Dr Thomas M Brennan, and Dr Philip I Nash, four-year terms, and Dr Daniel A McAteer, Dr Sydney Nussbaum, and Dr Joseph Tenopyr, five-year terms

The board of censors, of which Dr John J Gainey is senior censor and Dr A W Martin Marino is secretary, includes Dr Merrill N Foote, Dr Gainey, and Dr Robert A Wilson, one-year terms, and Dr Harry Feldman, Dr Edwin A Griffin, Dr Marino, and Dr Abraham M Rabiner, two-year terms

Delegates to the Medical Society of the State of New York for 1941 are Drs E Jefferson Browder, D'Albora, Feldman, Charles F Fisher, Irving Gray, Walter D Ludlum, Harvey B Matthews, McAteer, Meagher, Nash, and Sins Delegates to the State Society for 1941-1942 are Drs Anderson, Andresen, Bernstein, Dattlebaum, Griffin, Klein, Masterson, Charles F McCarty, McGoldrick, Irving J Sands, Schwartz, and Wood

At the dinner for Dr Dattlebaum on January 28, at the Towers Hotel, a first-aid kit for the British fighting forces was presented to him The kit is packed with equipment essential for emergency treatment and was a gift from 500 of Dr Dattlebaum's "medical friends of Brooklyn"

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were Mr James R Stevenson, a member of the board of governors of the hospital, Mr C B Winslow, vice-president of the Hospital Association, and Dr Malcolm Goodridge, president of The New York Academy of Medicine and a classmate of Dr Kelly

The Yonkers Academy of Medicine met on January 15 at the Hudson River Country Club Dr John L Kantor, gastroenterologist at Monte-

flore Hospital, presented a paper on "The Diarrheas." A general discussion was opened by Dr Frederic M Johnson and Dr Paul K Shirk. A collation followed.

The New Rochelle Medical Society met on January 13 and Dr Hassow Von Wedel spoke on "Recent Advances in the Differential Diagnosis of Blood Dyscrasias from the Pathological and Clinical Standpoints."

### Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
Sedgwick E Austin	72	Pennsylvania	January 31	Auburn
Albion O Bernstein	28	Maryland	November 23	Manhattan
Alfred Dannhauser	46	Tuebingen	December 16	Manhattan
Ernest W Ewell	—	Buffalo	November 30	Rochester
Grant F Glassbrook	48	Albany	January 30	Albany
William D Hennen	64	P & S N Y	January 31	Manhattan
Stanton P Hull	54	Albany	January 24	Troy
Fisher M Joslin	72	Albany	January 26	Albany and Voorheesville
John P MoHugh	48	Univ & Bell	February 3	Long Island City
Joseph Schwartz	44	L I C Hosp	February 5	Bronx
David W Tovey	64	Bell	February 12	Manhattan
William E Walsh	62	Syracuse	January 23	Auburn
Theodore Yuhl	47	Budapest	January 29	Manhattan

### BROOKLYN UROLOGICAL SOCIETY

The next meeting of the Brooklyn Urological Society will be held on Tuesday, March 11, at the Methodist Hospital, Brooklyn. The scientific program is as follows: 1 Case report "Carcinoma of Penis" (Motion Picture), by Dr Joseph Scialabba (by invitation), 2 Case reports "(a) Carcinoma in Ectopic Kidney," "(b) Cystectomy for Carcinoma of Bladder," by

Dr Leo S Drexler, 3 Case report "Tumor of the Ureter," by Dr Howard T Langworthy, 4. Case report "Hypernephroma of Kidney," by Dr Oscar Schoenemann, 5 "The Medical Aspects of Renal Calculi," by Dr Rosario Mulé, 6 "The Pathology of Symmetrical Cortical Necrosis of the Kidneys," by Dr Shik A Polayes, pathologist, Cumberland Hospital

### TWINS AND TORNADOES

Discussing "Insurance Against Multiple Births," the *Journal of the American Medical Association* says

"Josh Billings once said that there is one thing for which no man is ever quite prepared and that thing is twins. In his time the actuaries had not given serious consideration to the incidence of multiple births. Now they tell us that a plural birth occurs once in every eighty-eight pregnancies, which makes the odds reasonably certain except for the discount necessary because of the tendency toward inheritance of twinning.

"Nevertheless one insurance company, perhaps as a publicity stunt, now offers indemnity for multiple births, which it calls 'plural birth insurance.' For a premium of \$15 a payment of \$500 will be made, or for \$25 an 'indemnity' of \$1,000 will be paid in the event that a plural birth occurs. The policy is not issued where there is record of twins on the male side. Since it is now known that the roentgen ray can reveal the presence of twins in the latter half

of pregnancy, the company will not issue a policy to cover births occurring within five months subsequent to the date of the application.

"So many things can happen to us nowadays that it is almost impossible to insure oneself against all of life's hazards. There is the possibility of fire, earthquake, tornado, accident, war, burglary, loss of occupation, old age, golf, and increased taxes. There is also the possibility that the necessary premiums to protect us against all the hazards which we may meet might eventually reach our total earning power. There are a number of risks that are more imminent than triplets and quadruplets. Moreover, as in the case of the Dionnes, there is the possibility that multiple births might eventually be a benefit.

"No doubt there are a number of prospective fathers right now who would be willing to venture a small premium if they could be given a reasonable guaranty of something happening in their lives like what the Dionne quintuplets have turned out to be."

# Hospital News

## Important Court Ruling on Hospital Labor Relations

A DECISION of great importance to hospitals was handed down on January 6, says *The Modern Hospital*, by the supreme court of Pennsylvania in the case of Western Pennsylvania Hospital, *et al*, vs the Pennsylvania Labor Relations Board and the Hospital Workers Local Union No 255, *et al*

Some 25 hospitals had refused to execute a proposed agreement with the unions or to negotiate any agreement and the unions then appealed to the Pennsylvania Labor Relations Board, charging unfair labor practices on the part of the hospitals. The hospitals stated that the formation of a union among hospital employees would result in demands that would jeopardize the financial ability of the hospitals to continue operation and, furthermore, that strikes or similar interruptions would jeopardize the safety of patients

The lower court granted an injunction against the state board and the unions, and this was upheld by the supreme court which stated that a hospital is not an industry nor are its employees engaged in a single trade, craft, or occupation

### Health, Safety, Life at Stake

"It has not been the custom in the past to unionize hospitals," the court stated. "The effect of unionization and attendant efforts to enforce demands would involve results far more sweeping and drastic than mere property rights

It is not merely a question of suspending operations, ceasing work and stopping production, such as might be true in a steel mill or automobile factory. It is a question of protecting the health, safety and, in many cases, the very lives of those persons who need the service a hospital is organized to render. The results are quite different and more extensive than are involved in an ordinary labor dispute

We cannot conceive that the legislature intended to include hospitals within the purview of the act (state labor anti-injunction act). Consequently, even though the words used might conceivably be broad enough to include a hospital, nevertheless, a hospital is not within the spirit of the act and, not being within the spirit, the act does not apply."

The court also held that the Pennsylvania Labor Relations Act did not apply because "hospitals are scientific institutions created for a humane purpose in amelioration of the sufferings of mankind." Pointing out that they require the well-coordinated services of many people, the court held that "this would be impossible, should we hold the labor act applicable with all its attending ramifications, interruptions, and possible cessation of service due to labor disputes and attending financial inability to function." The court also pointed out that the hospitals are, with few exceptions, agencies selected by the state to assist in the care of the indigent sick

## The Nurse's Thoughts at 3 A M

When the wards are dark and quiet,  
And the night is cool and still,  
And the old neurotic patient  
Has stopped yelling for a pill.  
When the shaded lights are burning  
By the desk and down the hall,  
And the chirping of a cricket  
Is the only sound at all.  
Then's when you get to thinking  
And you see the strangest things,  
Your imagination brings  
I can picture the Crimes, -  
And the Lady with the Lamp,  
As she valiantly trudges  
On inspection round the camp  
She held a candle in her hand  
And I wonder did she know  
How that feeble flame she lighted  
Was to multiply and grow  
It brightened then a small confine,  
Who was there to foresee  
That later by a hundred years  
The gleam would fall on me!  
Whoe'er is touched is set apart  
To guard a sacred trust,  
To hold the light for others,  
To be honorable and just  
So tonight I sit and wonder  
If my life will ever be  
A magnifying of that flame  
That came from her to me  
Will I build it up and pass it on  
To ever brighter grow,  
Or will my influence cheapen it,  
Cause it to flicker low?  
May I ever do my very best  
In making others see  
What I can feel within my heart,  
What nursing means to me.

—From *Oklahoma University News*, quoted in *Davis Nursing Survey*

## Volunteer Aids in Seven Departments at New York Post-Graduate Hospital

VOLUNTEERS perform indispensable services at New York Post-Graduate Medical School and Hospital, New York City. An average of 38 volunteers are on duty each month. As told in *The Modern Hospital*, here are some of their duties in the seven departments in which they serve

**Corridors and Wards**—Take telephone calls, arrange flowers, check visitors on the wards, run errands for drugs and supplies, do clerical work, prepare refreshments, feed patients, make supplies, and escort patients who are being discharged

**Laboratories**—Make blood counts in hematology clinic and do research

**Library Service**—Handle the entire work, including cataloging. The library serves both patients and personnel.

**Operating Room**—Take telephone messages for doctors and assist in cleaning instruments

**Outpatient Department**—Assist the nurses, do errands, filing, typing, and admitting.

**Social Service Department**—Take social service histories, keep records, arrange for admissions to hospital, and do case work.

**Occupational Therapy**—Assist, following course of training

Volunteers also serve at the Skin and Cancer Unit in the clinic, drug room, file room, photographic section, social service, and department of radiology

Receptionists, or those volunteers who work on the wards and in the corridors, take a short training course. The course is repeated each month and volunteer captains serve in turn as the instructor

## Newsy Notes

Organization of 102 hospitals for the collection of surgical equipment, medical supplies, funds, and clothing to aid British hospitals is announced by the Greater New York Hospital Association

A prefabricated, 126-bed "siege" hospital, to be shipped to England, is under construction in this country. The hospital will be operated jointly by the American Red Cross and the Harvard University public health unit. When the hospital is completed, 75 American doctors, Red Cross nurses, and laboratory technicians will make an extensive laboratory and field study of communicable diseases under wartime conditions and report their findings to the United States Army, Navy, and Public Health Service

The National Youth Administration has approved a project for the training of forty workers in the Albany Hospital. Approximately \$5,000 will be paid these workers by the N.Y.A. According to E. W. Jones, director of the hospital, N.Y.A. workers will train as nurse aides, kitchen maids, cleaning maids, porters, office clerks, and mechanics

Associated Hospital Service of New York now is paying hospitals at the rate of about \$8,000,000 a year for services rendered to subscribers, says Dr. S. S. Goldwater in *Hospital Reporter and Guide*

An oxygen therapy department has been organized at Israel Zion Hospital, Brooklyn.

A blood plasma bank, to be operated by the House of the Good Samaritan and the Mercy Hospital, Watertown, has been provided through the generosity of the Watertown Lions' Club

Patients at Meyer Memorial Hospital, Buffalo, read more than 65,000 books last year

At a meeting of joint committees from the Tarrytown and Dobbs Ferry hospitals on February 2 it was voted to engage an architect to study both plants and advise which one would be the better for development into a hospital of 120 beds. The inference was that it might be necessary to close one hospital.

The new Triboro Tuberculosis Hospital in Queens has "musical pillows," issued on the doctor's O.K., with which the patient may enjoy radio programs without disturbing his neighbors

St. Luke's Hospital, New York City, has a library and recreation room for employees

Clinical photography of patients is growing so common that Dr. M. A. Weiner, of Cumberland Hospital, Brooklyn, writes a warning in *The Modern Hospital* that the legal consent of the patient must always be secured

Dr. Edward S. Rimer has been chosen president of the society of alumni of Bellevue Hospital.

A medical staff for the Roslyn Harbor Crest Hospital has been formed of physicians on the north shore in Nassau County

In some mental hospitals, particularly in Illinois, wards and isolation rooms are painted in a particular manner. For overactive patients, blue and certain shades of green rooms are provided in milder cases, violet and purple for the agitated and overexcited ones. Purple, by the way, is generally said to be a good soporific, though it is too strong a hue for ordinary people who want only to rest their nerves, it easily produces melancholic reactions, says Dr. J. F. Oliven in *Mental Hygiene News*

The Rochester General Hospital news letter for December contains the statement that if all the manufacturers of instruments in this country were to work on a twenty-four hour basis it would take two years for them to produce all the instruments at present on order from the government. Not a very cheerful outlook for the hospitals and others who constantly require a new supply, remarks Editor Ponton of *Hospital Management*

## Improvements

Riverside Hospital, on North Brother Island in East River, is to be enlarged by a three-story building for tuberculous patients. Costing

\$1,103,350, it will occupy a site 360 by 150 feet, have 152 beds, and serve as the entire hospital's administrative and surgical center

A campaign is to be launched to provide a new public hospital at Massena

A \$50,000 addition to the Julia L. Butterfield Memorial Hospital at Cold Spring is contemplated

An addition to the Oneida City Hospital is being advocated to provide twenty-five more beds

The superintendent of Ilion Hospital, Miss Ruth Yale, declares in her annual report that the present plant is inadequate and asks for an enlargement

Knickerbocker Hospital, Manhattan, has a new x-ray department

A new x-ray machine and equipment have been given to Our Lady of Victory Hospital, Lackawanna, by American Legion Post 63

A \$1,700 iron lung has been presented to Columbus Hospital, New York City, by the Isaac Gimbel Memorial Post 1206, American Legion

## KEEP THE PROFESSION OUT OF THE MINUS COLUMN

Dr. Alfred M. Hellman, new president of the Medical Society of the County of New York, in his inaugural address on January 27, pointed to the decline in German medicine as a warning against government-controlled medicine in this country.

"In Germany," he said, "medicine is taking a decided backward step under totalitarian rule and placing the health of its people in the hands of only partially trained medicos."

He then turned to conditions in the medical profession here and said it was true that some physicians in this country had found it difficult to earn enough to support their families and to educate their children, and they felt as a result that "any change would be an improvement," but he asserted vigorously that this was "a view which I definitely do not share."

"No matter what smaller temporary gains would come to a few physicians under government-controlled medicine," he asserted, "the net result to the medical profession would be in the minus column."

"The larger the sum voted by the federal or state government for medical care, the greater would be the number of nonmedical people living from this liberal donation, the greater would be the stranglehold on the medical profession and the kind of medicine it could practice."

Dr. Hellman said he had tried to visualize what would happen to his younger colleagues under suggested changes involving the government in medicine.

"Only the few with little practices and those with political influence would gain advantage,"

he declared. "A few incompetent or unfortunate physicians might be lifted by the bootstraps and momentarily raised from their mire of discontent, but this at the expense of the vast majority."

Referring to his inauguration at the meeting as head of the organization of more than 5,000 physicians, Dr. Hellman said he disliked being tagged with the label "conservative, with the meaning certain of our doctors have placed on it," but he said he deserved that name if conservatism meant "being against Communism, and against state-controlled medicine run by lay people."

Scanning the local medical picture, he told his fellow physicians that one recent development which needed watching was "nonprofit sickness insurance." Too many companies for this purpose are being formed, he said.

Regulations also would be needed to keep the increasing partnerships and cooperatives of physicians "in line with our views of democracy, fair competition, and free choice of physician," he said.

Dr. Hellman also told reporters in an interview that he had appointed a committee of seven to work out a plan by which the plasma method of preserving blood, now being used to send blood to Great Britain, could be used to provide adequate quantities of plasma for indigent patients in local hospitals too small to maintain one of the so-called blood-banks. He said it was hoped that this program could be worked out by the end of this year.

## "IF IT COMES"

"If It Comes," Greater New York will not be caught napping, says the *New York Medical Week*. The first meeting of Mayor LaGuardia's City Defense Council revealed that the Administration has already gone a long way toward

planning emergency measures should they ever be necessary. Police and fire precautions have been mapped. It remains to perfect details, enlist volunteer aides, and teach the public how to meet various dangers calmly and intelligently.

# Public Health News

## Revision of Clinical Aspects of Pneumococcus Pneumonia

SECTION 3 of the loose-leaf handbook, *Clinical Aspects of Pneumococcus Pneumonia*, issued by the Bureau of Pneumonia Control of the Division of Communicable Diseases has just been completely revised. It summarizes the recent advances in the specific treatment of pneumonia, with particular reference to chemotherapy and antipneumococcus serum, and attempts to incorporate the consensus of the following authorities who have assisted in the revision: Doctors Jesse G M Bullock, Russell L Cecil, Lloyd D Felton, Maxwell Finland, Cohn MacLeod, Norman Plummer, and the medical staff of the Bureau of Pneumonia Control.

The new section should be substituted for Section 3 of the original loose-leaf handbook issued early in the fall of 1939. A copy of the re-

vision has already been sent to physicians who requested the handbook in answer to a questionnaire sent out in the summer of 1939. Unless the Department has been notified of any subsequent change of address, the revision has been mailed to the address given at that time.

Physicians located in New York State, outside of New York City, who did not request the handbook when it was first published may obtain it on request to the Bureau of Pneumonia Control, State Department of Health, Albany, New York. This publication is available only to registered doctors of medicine and to osteopaths authorized to use biologic products under the provisions of Chapter 741, Laws of 1939. The New York City Department of Health supplies a similar manual for physicians practicing in New York City.

## Postgraduate Lecture Courses

Dr Clayton W Greene, Buffalo University College of Medicine, has arranged a course on the Treatment of Common Diseases for the Schenectady County Society to be held in Schenectady, at 4 30 p.m. The schedule of talks is as follows: March 5, "Treatment of Common Skin Lesions," by Dr Earl D Osborne, March 12, "Treatment of Epigastric Distress Following Meals," by Dr A. H. Aaron, March 19, "Treatment of Dyspnea," by Dr Frederick T Schnatz, March 26, "Treatment of Precordial Pain," by Dr Clayton W Greene, April 2, "Results of Modern Methods in the Treatment of Anemia," by Dr Francis D Leopold, March 9, "Treatment of Low Back Pain," by Dr Frank H Potts, all of Buffalo.

A course of lectures on General Medicine, arranged for Wayne County Society, is being held in Newark and Lyons, alternately. Included in the series are the following lectures: On February 4, "Goitre—Its Management," by Dr Frederick S Wetherell, Syracuse, February 18, "Treatment of Chronic Rheumatism," by Dr Russell L Cecil, New York City, March 4, "Carcinoma of the Female Genitalia," by Dr Nathan P Sears, Syracuse, March 18, "What Can We Do for Angina Pectoris and Coronary Occlusion?" by Dr Clayton W Greene, Buffalo, April 1, "Recent Advances in Obstetrics," by Dr James K Quigley, Rochester, April 15, "Staphylococcal Disease," by Dr O W H Mitchell, Syracuse.

The lectures on "Carcinoma of the Female Genitalia" and "Recent Advances in Obstetrics" are given in cooperation with the State Department of Health.

A course on General Medicine, arranged for Genesee County Society and held at Batavia at 8 30 p.m., is as follows: February 18, "Treatment of Chronic Rheumatism," by Dr Russell L Cecil, New York City, March 4, "Carcinoma of the Female Genitalia," by Dr Nathan P Sears, Syracuse, March 18, "What Can We Do for Angina Pectoris and Coronary Occlusion?" by Dr Clayton W Greene, Buffalo, April 1, "Goitre—Its Management," by Dr Frederick S Wetherell, Syracuse, March 15, "Staphylococcal Disease," by Dr O W H Mitchell, Syracuse, May 6, "Recent Advances in Obstetrics," by Dr James K Quigley, Rochester.

Dr A. F. R. Andresen, Long Island College of Medicine, Brooklyn, has arranged the following course on General Medicine for the Otsego County Medical Society, to be held at Oneonta, at 8 30 p.m.: March 12, "Dietary Therapy in Gastrointestinal Disease," by Dr Albert F. R. Andresen, April 9, "The Diabetic Patient and the General Practitioner," by Dr Milton B Handelsman, May 14, a subject in obstetrics, to be decided later, by Dr Mervin B Armstrong, June 11, "Some Problems in Cardiac Diagnosis," by Dr J Hamilton Crawford, all of Brooklyn.

## SPECIAL LECTURE

The New York Polyclinic Medical School and Hospital wishes to announce a special lecture by Dr Russell L Cecil, professor of internal medi-

cine, New York Polyclinic Medical School and Hospital, on Wednesday, March 26, on "The Present Status of the Theory of Focal Infection."

# Woman's Auxiliary

To the Medical Society of the State of New York

DR. JAMES M. FLYNN, president of the Medical Society of the State of New York, sends our members this message. "As you must know, the Medical Society of the State of New York is divided into eight district branches embracing in all sixty-one county societies. Thus, the district meeting is an important event which merits the interest of all members of the component groups. In my visits to the different district meetings, I was most favorably impressed by the meeting of the second branch held at Mitchel Field, as well as by that of the eighth held at Niagara Falls. Both of these meetings left little to be desired either in respect to attendance or interest shown. And credit for this happy result must certainly be given to the woman's auxiliaries of these district groups. To my mind, the whole-hearted cooperation of the women in the varied activities incident to the meetings was largely responsible for their success. The work of the physicians' wives at these gatherings has a particular value, and it calls for commendation and encouragement. I would urge the formation of more auxiliaries and suggest that a real effort be made to enlist the support of all physicians' wives, to the end that the district meetings be accorded the response that their importance would seem to demand. Further, may I state that the contribution of the woman's auxiliaries to organized medicine need not stop at this point. Their interest gives rise to the hope that they may become an effective force in bringing to the community at large a more intelligent understanding and appreciation of the ideals and objectives of the medical profession."

The midwinter executive board meeting of the State Auxiliary was held at the DeWitt Clinton Hotel, Albany, on February 5, Mrs. Luther H. Rice graciously presiding. Informative reports of the standing committees were read. Their fine work is highly commendable. Of special interest was the accomplishment by the Physicians' Home Committee. Inspiring reports of county presidents were read by Mrs. A. L. Madden, Albany, Mrs. J. Roberts, Broome, Mrs. C. E. Wertz, Erie, Mrs. O. J. Mowry, Herkimer, Mrs. L. Harris, Kings, Mrs. S. L. Homrighouse, Montgomery, Mrs. W. R. Scott, Niagara, Mrs. J. I. Farrell, Oneida, Mrs. E. M. Neptune, Onondaga, Mrs. W. W. Davis, Orange, Mrs. J. Rainey, Rensselaer, Mrs. T. Bullard, Saratoga, Mrs. A. W. Greene, Schenectady, Mrs. W. C. Carhart, Suffolk, Mrs. I. V. Decker, Washington. Dr. Joseph Lawrence addressed the group and emphasized the importance of medical legislation. He also extended the members an invitation to visit the legislative sessions. Mrs. Carlton Potter, Syracuse, member of the national board, reported her attendance at a meeting of the public relations committee. She advocated that all doctors' wives acquaint themselves with current movies, plays, and books pertaining to medicine. Those who attended,

in addition to county presidents, were Mesdames George B. Adams, president-elect, H. J. Noerling, J. E. Noll, C. Potter, F. Irving, E. A. Griffin, G. Towne, W. J. Lavell, L. A. VanKleeck, O. Pfaff, J. P. Lasho, A. Vander Veer, R. F. Johnson, F. L. Sullivan, S. P. Jones, and A. M. Bell. The fifth anniversary of the organization of the State Auxiliary was celebrated by a dinner and a get-together party February 4 at the DeWitt Clinton Hotel.

## County News

**Erie** The executive board and assistants to the chairman of the state convention were delightfully entertained at dinner by Mrs. C. E. Wertz, chairman of the convention. All plans were formulated and discussed. The committee is putting every effort toward making this event an outstanding affair.

**Onondaga** The regular monthly meeting of the Auxiliary was held at the Crouse Irving Hospital on Tuesday evening, February 4, forty-eight members being present. Dr. C. George Murdock spoke on "Health Tests for Household Workers." Interesting points on current legislation were also presented by Mrs. E. G. Allen, legislative chairman, for general discussion in the meeting. Plans for a birthday dinner-dance were presented in detail before the meeting by Mrs. Glendon R. Lewis. The party was held February 13, at the University Club of Syracuse. It was a formal affair and a buffet dinner was served. The committee on public relations directed a collection of surgical instruments, sedatives, vitamins, and baby foods for Britain.

**Oswego** Social comradery among members of the medical profession and their wives was held by giving a dinner-dance at the Hotel Pontiac on December 13. The occasion afforded so much pleasure that it was agreed to hold an Easter dinner-dance party. An annual Christmas gift of hospital scales was made to the County Health Camp. Dr. Joseph M. Riley gave an interesting talk on the subject "Juvenile Eyesight" at the regular monthly meeting on January 8. This county reports their membership as being very enthusiastic about auxiliary work.

**Schenectady** Mrs. Walter Drew, president of the Public Health Nursing Association, spoke on the relation of the medical profession to her work at the regular monthly meeting held at Sunnyview Hospital, January 28. The requirements of public health nurses and their duties were explained. At the business meeting Mrs. A. W. Greene, president, announced that all members were being classified for medical defense work. A social hour and tea followed.

**Suffolk** A luncheon and executive board meeting, at which Mrs. W. C. Carhart presided, was held January 4, at the Milestone Inn, Sayville, Long Island. The group formulated plans for the coming year. A dinner party, with the doctors as guests, was given at the Patchogue

**Hotel on January 29** The following officers are carrying on the active work for this year—president, Mrs W C Carhart, president-elect, Mrs George P Bergman, Mattituck, first vice-president, Mrs S A Arnold, Bay Shore, second vice-president, Mrs L P Gouley, Huntington, recording secretary, Mrs A. Franklin, Central Islip, corresponding secretary, Mrs B Feurstein, Bay Shore, treasurer, Mrs W R. Carman, Islip, delegates to the State Medical Convention are Mrs Bergman and Mrs Gouley, alternates, Mrs Kolk and Mrs Jones. Directors are Mrs Frank Overton, of Patchogue, and Mrs E R. Hildreth, of Bay Shore.

#### Convention

Come all ye sisters—pack your duffel and shuffle off to Buffalo on April 28, for the convention time of your life. This is to be a convention that is different! The extracurricula activities will appeal to you. The regulation teas, luncheons, and banquets will be in order but with at-

mosphere. Aside from that, Buffalo, "The City of Good Neighbors," offers you hospitality to rival the sunny southland. The Niagara Frontier in the pioneer spirit of "Wells Fargo Days" bids you come and twist the Buffalo tail. Breathes there a girl with soul so dead who doesn't evince some flickering of interest in her house? The Niagara Frontier abounds in antiques and antique shops. This is a collector's paradise. The finest rock crystal in the country is manufactured in Buffalo. Wouldn't you like to see how? Buffalo's parks and museums will be a treat to the lovers of beauty among you who are artistically inclined. Buffalo in the Spring—well—what matter the weather as long as we're together—Mrs C E Wertz, convention chairman.

#### Bulletin

Our goal for the Bulletin is 350—we have 103 to date. Send your subscription to your county chairman today!

### THE HIT CHIROPRACTIC BIRD FLUTTERS

"Chiropractic is a distorted technic for the diagnosis and healing of disease, which is being foisted on the American people, notwithstanding that its advocates lack the slightest conception, let alone appreciation, of the most elementary and clearly demonstrable facts in connection with the human body in health and disease," the *Journal of the American Medical Association* for February 1 says in an editorial on "The Chiropractic Theory of Law."

The editorial continues: "The realities of anatomy, pathology (the essential nature of disease), physiology, and chemistry mean nothing to chiropractors. Nevertheless, any informed person who points out the inanity of their theories and the baneful effects of their treatment is, by their propaganda, bigoted, hidebound, reactionary."

"Chiropractors are in general quite uninformed in the field in which they hold themselves out as having some knowledge or aptitude. When they digress into other fields, they usually reveal such appalling ignorance that even the most casual observers see them in their true light. Few people realize that chiropractors, unlike physicians, seldom if ever have any college education, indeed, some have not even completed the high school. In the *National Chiropractic News* for November-December, 1940, appears an editorial entitled 'Witch-Hunting in Indiana.' This rumination was elicited in response to what appears to be a campaign of T M Overley, secretary of the Indianapolis Better Business Bureau, looking toward the prosecution under the laws of the state of Indiana of all unlicensed chiropractors practicing in the state. These individuals seek to practice in disregard of such an inconvenient and inconsequential technicality as obtaining a license after presenting to the Board of Registration in Medicine evidence of the educational qualifications required by the Medical Practice Act of Indiana and satisfactorily passing the

examination required by law. Mr Overley, so the editorial states, is 'bluenosed' in this campaign 'against qualified but unlicensed chiropractors.' Were this statement not so pathetic, it would be ludicrous. 'Qualified' by whom, for what? Shall cultists be permitted to ignore the applicable healing art licensing law if, in their own estimation, they possess the qualifications required by that law? Is the matter of licensure not a function of the state?

"Quoting directly from the editorial 'We asked him [the secretary of the Indianapolis Better Business Bureau] to distinguish and differentiate between the qualified, responsible [unlicensed] practitioner and the unqualified racketeer'."

"Granting, without admitting, that such a distinction could be drawn, the request for such a distinction itself evidences the unique mentality behind chiropractic thinking. Apparently it is good chiropractic theory to ignore a healing art licensing law on the ground that such a law applies to the mass of men and to physicians but not to any adherent of this blissfully uninformed cult."

"Mr Overley, because of this campaign against all chiropractors violating the licensing laws of the state, because of his 'purblind, bigoted' refusal to take the heat off 'qualified but unlicensed chiropractors,' is, the editorial remarks (after giving due credit to General Hugh Johnson for originating the phrase), 'suffering from halitosis of the intellect.' This significant diagnosis, notwithstanding its origin in the General and its acceptance by the chiropractors, is just as scientific as chiropractic itself. The editorial implies that Mr Overley's efforts to suppress the unlicensed practice of chiropractic must be bearing some fruit. However unfortunate from the chiropractic point of view, this consummation is distinctly in the public interest."

# Books

Books for review should be sent to the Book Review Department at 1313 Bedford Avenue, Brooklyn, N. Y. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and interest to our readers.

## REVIEWED

**Sexual Pathology** A Study of Derangements of the Sexual Instinct By Magnus Hirschfeld, M.D. Octavo of 368 pages. New York, Emerson Books, Inc., 1940. Cloth, \$2.95

*Sexual Pathology* is a comprehensive, detailed study of the derangements of the sexual instinct. In the three main divisions into which the volume is divided (Sexual Symbolism, Hypereroticism, and Impotence), the author, with the aid of case histories, analyzes the many sexual abnormalities.

It is chiefly a dissertation on the various sexual idiosyncrasies. Therapy, which would have been helpful to those interested in the problem, is but superficially discussed and then only in rare instances.

Although its direct, easy flowing style and the vivid account of cases would be very enlightening and interesting to the layman, the frank discussion of such subject matter naturally warrants restricting the book to members of the medical profession or advanced students of psychology.

SAMUEL L. SIEGLER

**Clinical Diabetes Mellitus and Hyperinsulinism.** By Russell M. Wilder, M.D. Octavo of 459 pages, illustrated. Philadelphia, W. B. Saunders Co., 1940. Cloth, \$6.00.

There is a very definite need for this type of work on the subject of diabetes mellitus (and the reviewer welcomes the inclusion of the clinical opposite hyperinsulinism) that may be recommended as a text on these subjects to medical students and general practitioners.

The book is not a collection and revision of a great mass of reference material and, as is too often the case in this type of subject, an accumulation of statistical data. Dr. Wilder covers the essentials necessary for clinical application of these diseases and presents them practically.

The method of using footnotes throughout the text is to be commended, and it is hoped that this style of presentation will become more popular in future medical texts.

Of great importance is the stress put on having the diabetic diet meet all nutritional requirements of proteins, minerals, and vitamins. Many workers in the field of diabetes mellitus will not agree with Dr. Wilder on the relatively high caloric values of his diet prescriptions due to the generous use of fats. The food lists are given in composition of 100-Gm. portions which complicates diet calculation by the physician and the patient and adds the burden of the use of scales, which in this country is gradually being displaced by the use of household measure.

The management of diabetic coma, the surgical diabetic, and the regulation with insulin are particularly well presented. The section on hyperinsulinism is well done and presented in a completely practical manner for direct clinical approach.

This book is highly recommended as a text for students and general practitioners.

PAUL C. ESCHWEILER

**The Diagnosis and Treatment of Diseases of the Peripheral Arteries.** By Saul S. Samuels, M.D. Second edition. Octavo of 372 pages, illustrated. New York, Oxford University Press, 1940. Cloth, \$6.50.

Although the author has completely rewritten this edition, he has added very little to what was already presented in the first edition. The only noticeable difference appears to be that instead of devoting three-fourths of his book to thromboangitis obliterans he now devotes one-half of the book to this subject. This is done in spite of the fact that thromboangitis obliterans is a relatively rare disease and makes up about 5 per cent of the total incidence of peripheral arterial diseases. The clinical and pathologic description of Buerger's disease is good. The value of intravenous hypertonic saline in treatment is extolled while all other methods are deprecated. His treatment of the subject of arteriosclerosis obliterans is poor, inadequate, and confusing. He presents a total of ten illustrated case reports of diabetic gangrene in this chapter. Nine out of the 10 are cases of acute, infectious, diabetic gangrene, which from the textual matter are obviously cases with patent major arteries. This is disclosed by oscillographic readings in these cases ranging between one-half and eleven at the ankle. These 9 cases without arterial impairment got well with good local surgical management. The only 1 that came to mid-thigh amputation in his series had an oscillographic reading of zero. Thus he presents successful results, in the chapter on arteriosclerosis obliterans, in patients who did not suffer from arteriosclerosis obliterans at all. This is misleading. What is equally important if not most important in this group is infarctive gangrene due to arterial impairment. This the author completely ignores. In the conservative treatment of obliterative arteriosclerosis as well as in Raynaud's disease, he recommends, for some mysterious reason, the use of intravenous hypertonic saline.

W. S. COLLENS

**New Facts on Mental Disorders.** Study of 89,190 Cases. By Neil A. Dayton, M.D. Octavo of 486 pages, illustrated. Springfield, Charles C. Thomas, 1940. Cloth, \$4.50.

This is an epochal book. It embraces a commendable analysis of 90,000 admissions to mental hospitals in Massachusetts from 1917 to 1933.

Dr. Dayton, with an able group of advisors, has made possible the answers to inquiries, such as: Why a yearly increase in admission rate? What are the modifiable factors? In significant language that no physician, sociologist, or intelligent layman should fail to comprehend.

Unlike many books that are dominantly statistical in content, the present one is happily readable. The gist of each chapter may be quickly gleaned by virtue of a pithily formulated summation which precedes each of eleven topical groupings. These include general considerations, age

in mental disorders, nativity, alcohol, marriage, age, time, other clinical factors, and a penetrating discussion of factors influencing the incidence of mental disorders

The book is replete with graphs which strikingly and concisely bring to the front the upshots of this much needed study

FREDERICK L PATRY

**Rheumatic Fever Studies of the Epidemiology, Manifestations, Diagnosis, and Treatment of the Disease During the First Three Decades** By May G Wilson, M D Quarto of 595 pages, illustrated New York, Commonwealth Fund, 1940 Cloth, \$4.50

Dr Wilson's excellent monograph will take its place at once as the standard work in its field and one of the most important in any field The author disclaims any attempt at encyclopedic treatment of the subject, yet the volume is so comprehensive that it is unlikely that earch here for any important data on rheumatic fever would be fruitless

There are 578 pages, a good index, and a bibliography It is subdivided into five parts: epidemiology and etiology, clinical and pathologic manifestations, course, diagnosis, and care and management There are invaluable appendices containing miscellaneous supplementary material, such as tables analyzing 112 rheumatic families, technic of tests used in studying rheumatic fever, nomenclature and criteria for diagnosis of diseases of the heart of the New York Heart Association, etc This book, like other Commonwealth Fund publications, is beautifully bound and printed and is very reasonably priced

MILTON PLOTZ

**Treatment of War Wounds and Fractures With Special Reference to the Closed Method as Used in the War in Spain** By J Trueta, M D Duodecimo of 146 pages, illustrated New York, Paul B Hoeber, Inc, 1940 Cloth, \$2.50

This interesting little monograph is the story of the treatment of compound fractures during the recent civil war in Spain

After a brief historical survey of war surgery, the author gives a lucid description of the treatment and explains the principles on which it is based Then follow several chapters in which fractures of various bones are considered individually

The method of treatment is that introduced by Dr Winett Orr some sixteen years ago The results obtained prove the contention that closed plaster immobilization is the sine qua non in the treatment of compound fractures

MAYER E ROSS

**Manual of Medical and Surgical Emergencies** Edited by J C Geiger, M D Octavo of 199 pages San Francisco, J W Stacey, Inc, 1940 Cloth, \$2.50

The most suitable description of this book is that it is eminently sensible Almost every conceivable emergency likely to be encountered in this part of the world is adequately treated. One defect is that there is no section on poisons since toxicology is covered in a companion volume A chapter on the common poisons would make this volume a complete unit

MILTON PLOTZ

**Behind the Scenes of Murder** By Joseph Catton, M D Octavo of 355 pages New York, W W Norton & Company, 1940 Cloth, \$3.00

This book makes interesting and instructive reading for doctors, laymen, and lawyers It is not a collection of murder mysteries by a doctor but an attempt at the interpretation of the crime of homicide as seen through the experiences, in and out of court, of a distinguished psychiatrist He has evidently examined many murderers, and he analyzes their cases first as an alienist, but an alienist with the inquisitiveness of a sociologist and the thoughtful citizen. Are all the verdicts just or adequate? The doctor feels that, in spite of laws, human nature pulls the strings at some time or another for the judge, the attorneys, the experts, and the juries The chapter on "The Insanity Dodge" is illuminating and includes the statement "My and the jury's opinion in 84 per cent of the cases of killers' alleged insanity was that the insanity defense was an insanity dodge" One of the concluding chapters deals with the prevention of homicide Here will be found some vital observations and conclusions of a student of crime and crime prevention Whether he agrees or not with the opinions expressed, the casual reader will be deeply impressed by the seriousness of the problems outlined

JOSEPH RAPHAEL

**Physiology of Micturition** By Orthello R. Langworthy, Lawrence C Kolb, and Lloyd G. Lewis Octavo of 232 pages, illustrated Baltimore, Williams & Wilkins Co, 1940 Cloth, \$3.50

Within the pages of this compact and scientific treatise are contained valuable contributions to the study of the neuromuscular disturbances of the bladder It is the type of book which may be used as a consulting reference not only by urologists and neurosurgeons but by the general profession as well A large amount of experimental and clinical research have formed the basis of the concise and factual data contained therein. An extensive bibliography of the more important references is appended, as well as an alphabetical authors' index One cannot praise too highly the efforts of the authors for their experimental, clinical, and cystometric studies made possible financially by grants from several philanthropic organizations. The open-minded manner in which they have approached and studied the mechanism of micturition, together with the lesions produced by disease and injury of the brain, spinal cord, and various peripheral nerve structures, is most commendable The text is conveniently arranged in six separate divisions

AUGUSTUS HARRIS

**Artificial Pneumothorax Its Practical Application in the Treatment of Pulmonary Tuberculosis** Contributions by Saranao Lake Physiicians to the Studies of the Trudeau Foundation Editorial Committee Edward N Packard, M D, John N Hayes, M D, Sidney F Blanchet, M D Octavo of 300 pages, illustrated Philadelphia, Lea & Febiger, 1940 Cloth, \$4.00

Here in a small volume is a complete presentation of all that is of value on the subject of artificial pneumothorax in the treatment of pulmonary tuberculosis Some seventeen of the physi-

cians resident in Saranac Lake have aided in its production, each contributing a chapter or two, according to his special fitness, without loss of continuity in thought. There are nineteen chapters running from a historical review of the subject through the physiology of artificial pneumothorax, the selection of cases, the value of the x-ray in following the cases, a description of the apparatus employed, the technic of the procedure, accidents that may occur during the operation, pleural complications that may occur, etc., and end results of the treatment. It is all exceedingly well done and bears the mark of conservatism which as a rule characterizes the Saranac School.

The volume is beautifully illustrated, extremely well documented, and attractively presented. All students of pulmonary tuberculosis will find it a valuable addition to their libraries.

FOSTER MURRAY

**Acute Infectious Diseases. A Handbook for Practitioners and Students.** By J D Rolleston, M D, and G W Ronaldson, M D. Third edition. Octavo of 477 pages. St. Louis, C V Mosby Company, 1940. Cloth, \$4.50.

Dr Rolleston's book has been a standard and authoritative text on the clinical aspects of acute infectious diseases ever since the first edition was published. Based on the writer's extensive personal experience in this field and on a most careful study of the literature, this publication has, since its first appearance, maintained a leading position. In this new edition the authors have added to its authoritative position by a most thorough revision, with presentation in an excellent manner of the modern views on the questions of diagnosis and treatment in conjunction with concise descriptions of the clinical picture and the bacteriologic and pathologic aspect of each infection. The diseases included are those that are usually treated in isolation hospitals and include the usual exanthemas, diphtheria, mumps, whooping cough, typhoid, paratyphoid and typhus fever, cerebrospinal fever, the fourth disease, erythema infectiosum, with chapters on vaccination, Vincent's angina, erysipelas, and isolation methods. The book is quite up to date. The opinions expressed are the result of thorough familiarity with the subject matter, and they are most logical and certainly reliable and conservative. Many subjects of much current interest are discussed, and of particular importance may be mentioned the suction method for treatment of laryngeal diphtheria, the use of various prophylactics for measles including convalescent serum and placental globulin, the antitoxin therapy of scarlet fever, the drip infusion method of serum therapy, and the place of chemotherapy in certain of the acute infectious diseases. This book will provide the practitioner and the health officer with a valuable and reliable source of information on the modern management and treatment of this group of communicable diseases.

JOSEPH C REGAN

**The Surgery of Pain.** By René Leriche, M D. Translated and edited by Archibald Young, M D. Octavo of 512 pages, illustrated. Baltimore, Williams & Wilkins Co., 1939. Cloth, \$6.50.

The work of Leriche, especially the operation of penarterial sympathectomy devised by him

and employed in the treatment of a variety of disorders of the extremities, is a contribution quite generally known. There are, however, many other problems that have attracted the attention of this careful clinical investigator—to mention a few neuralgias of the face, causalgia, the pain of amputation stumps, Raynaud's disease and the pain of angina pectoris. This book is written in a simple straightforward, easily understood style, recounting some experiences that have been previously recorded but with hanging up to date our knowledge concerning the results that may be obtained in the relief of pain by surgical measures. The treatise has the touch of the master, René Leriche, who has been most responsible for the advances made in the treatment of a large number of painful disorders by appropriately applied operations on the sympathetic nervous system. It is highly recommended to all, for in the reviewer's opinion it will be found far more entertaining than many of the biographies now appearing on the bookshelves.

JEFFERSON BROWDER

**Diseases of the Nervous System.** By W Russell Brain, M A. Second edition. New York, Oxford University Press, 1940. Cloth, \$9.25.

The first edition was published in 1933 and on the whole was well received. As stated at the time it possessed the particular quality of unusual clarity so that each syndrome read as if chiseled in stone. Seven years have elapsed during which period newer concepts of disease, further refinement in diagnosis, and distinct therapeutic advances have occurred. On all these phases practically new chapters have been written.

There also has been a new arrangement of material, such as placing all diseases caused by virus infection under one heading. A separate chapter has been reserved for syphilis. The chapters on endocrine and trophic diseases have been omitted, which is unfortunate.

The number of illustrations, 79, seems adequate for this type of book. It is recommended particularly for senior medical students.

HAROLD R. MERWARTH

**Dermatologic Therapy in General Practice.** By Marion B Sulzberger, M D, and Jack Wolf, M D. Octavo of 680 pages, illustrated. Chicago, The Year Book Publishers, 1940. Cloth, \$4.50.

As a collaborator in the production of the annual *Yearbook on Dermatology and Syphilology* with Dr. Fred Wise and author of the recently published and most instructive book on dermatologic allergy, this new work should need but little introduction to the general practitioner to whom he seems to dedicate it so modestly in his title. It might well have been called a handbook for the dermatologist, for it contains much that any practitioner of our branch of the art of medicine could read with distinct advantage. One of the weak spots in many of the authoritative works on dermatology is the paucity of descriptive instruction concerning the proper and most advanced methods of therapy and the actual application of the same. This sort of knowledge and technic is the result of long clinical training which every aspiring dermatologist must pursue before he may call himself a specialist in his field. The book is a perfect *vade mecum* of

dermatologic information Not only are the descriptions of various diseases of the skin clearly defined in the text but series of pictures are given which are certain to aid the reader in the differentiation of diseases similar in their objective symptoms Lucidly described and generously illustrated are the methods for the preparation and application of various dressings, ointments, pastes, patch-testings procedures, and parenteral therapy Formulas that have served faithfully for many years, as well as those of recent invention, are given in profusion The chapter on the proper treatment of acne in its various stages is very instructive, and the advice offered for passing along to the patients is most sensible and valuable

NATHAN THOMAS BEERS

**Communicable Diseases** By Nina D Gage, R N, and John F Landon, M D Second edition Octavo of 411 pages, illustrated Philadelphia, F A. Davis Company, 1940 Cloth, \$3 50

This second edition is a clear, concise, comprehensive textbook covering all the important features of the common contagious diseases, written with a view toward the teaching of nurses Nursing care of each disease is given in a separate chapter following the disease Some other valuable additions are a glossary to clarify technical terms, a schematic representation of the discussion of each disease at the beginning of the chapter detailing each disease, and questions at the end of each chapter which if answered by the student will fix the principal points in mind The book should be helpful to the medical student The newer chemotherapeutic methods are included

KENNETH G JENNINGS

**Clinical Methods A Guide to the Practical Study of Medicine** By Sir Robert Hutchison, M D, and Donald Hunter, M D Eleventh edition. 16 mo of 622 pages, illustrated New York, Paul B Hoeber, Inc., 1940 Cloth, \$5 00

The eleventh edition of this well-known work is a handy collection of the various clinical methods used in diagnosis and treatment Although it consists of 622 pages, it is small enough to be carried in a pocket for easy reference This edition represents a well-written volume, with many deletions of old material and additions of new It should prove to be a valuable help to the practicing physician

MAX LEDERER

**A Synopsis of Surgery** By Ernest W Hey Groves, M D Eleventh edition. Duodecimo of 714 pages, illustrated Baltimore, Williams & Wilkins Co., 1940 Cloth, \$5 00

This small volume which has been, since its first edition in 1908, a brief summary of surgical procedures is a popular desk volume, and the present edition, as were its twelve previous editions, has been brought up to date This is particularly true of the sections on the treatment of fractures and the section on cleft palate In these the text for the most part has been rewritten, with the recent work of Veau included and the operative procedures of Langenbeck, Lane, and Brophy omitted

It will undoubtedly be regretted by some that the chapters in the previous editions on regional

diagnosis have been deleted The reviewer, for one, has always thought that they gave the volume something that made it more readily a desk reference book The arrangement of the subject matter is essentially the same as in the previous editions in that there is a brief discussion of etiology, pathology, complications, and treatment Affections of the entire body with the exception of the female genitalia are considered The illustrations are for the most part black and white but well done

HERBERT T WIKLE

**Essentials of the Diagnostic Examination.** By John B Youmans, M D Duodecimo of 417 pages, illustrated New York, The Commonwealth Fund, 1940 Cloth, \$3 00

This handbook will be of considerable help to medical students and to practitioners who wish a concise reference book on the problems of diagnostic examination There is no material in the book which is not to be found in similar works now available However, the Commonwealth Fund is to be commended for making a readable and dependable text available at so low a price The sections on office laboratory procedures and cardiac and neurologic examinations are especially good

MILTON PLOTZ

**Bailey's Textbook of Histology** By Philip E. Smith, Ph D, editor, and others Tenth edition Octavo of 764 pages, illustrated Baltimore, Williams & Wilkins Co., 1940 Cloth, \$6 00

Again the authors have compiled a text in this tenth edition which should benefit the student and teacher alike Numerous illustrations and sketches make for a clear and concise explanation of the subject matter

Two new chapters have been added one of these is on morphogenesis, and the other on the organization of nervous tissues A short list of references has been added to each chapter

This volume should be an aid to students of medicine

NATHAN REIBSTEIN

**Getting Ready to Be a Mother** By Carolyn C Van Blarcom Fourth edition revised by Hazel Corbin Duodecimo of 190 pages, illustrated New York, The Macmillan Company, 1940 Cloth, \$2 50

Written in a clear understandable style and profusely illustrated, this little volume makes a satisfactory instruction manual for first-mothers Prenatal care, nutrition, and postpartum exercises are intelligently handled

JAMES F BUTLER

**The Fundamentals of Nutrition** By Estelle E Hawley, Ph.D., and Esther E Maurer-Mast, M D Including Table of 100-Calorie Portions by Estelle E Hawley, Esther E Maurer, and Herbert F Van Epps, and Discussions of the Dietary Management in Specific Conditions by collaborators associated or formerly associated with the University of Rochester, School of Medicine and Dentistry Quarto of 477 pages, illustrated Springfield, Charles C Thomas, 1940 Cloth, \$5 00

This book goes straight to the point. It tells the physician what he should know about the fundamentals of nutrition, diet therapy, and diet planning. All the information and data are strictly relevant, historical and laboratory background is kept at a minimum.

The book is clearly written and illustrated with meaningful charts and pictures. Each chapter in the diet therapy section is written by a specialist in his field. The approach is always direct and practical. The physician learns not only what to prescribe, but—and this is just as important—how to prescribe it. Stress is laid on diets as modifications from the normal family meals rather than as separate entities. Consideration is given to the economic factors in diet teaching and diet planning which affect the largest majority of our population today.

The volume concludes with a liberal appendix, including a 100-calorie table, a section on evaluation of nutritional status, commercial vitamin products, some recipes and food suggestions for special conditions, and special diet instruction sheets.

This book is highly recommended for reference and everyday use because of its technical value and its fresh and practical point of view.

ETHEL PLOTZ BERMAN

**Introduction to Medical Biometry and Statistics.** By Raymond Pearl. Third edition. Octavo of 537 pages, illustrated. Philadelphia, W B Saunders Co., 1940. Cloth, \$7.00.

This is not an elementary textbook on statistical methods, proceeding from first principles through mathematical development to practical application, but is essentially a survey of the working methods most popular among American and British medical biometricians and statisticians. This assortment of working methods is well covered, and each process is illustrated with an analysis of data drawn from a field interesting to medical men. These illustrations are given in such detail that the numerical processes involved can be followed step by step. The reader is given a prolonged glance over the author's shoulder (Professor Pearl is an active worker in the field of medical biometry and statistics) and obtains a very definite idea of the kind of data he works with and how he analyzes this data. But not much is given as to the epistemology of mathematical statistics, or about the alternative methods preferred by some investigators.

ELDER A. PORTER

**Borrowed Children.** A popular account of some evacuation problems and their remedies. By Mrs. St. Loe Strachey. Duodecimo of 149 pages. New York, The Commonwealth Fund, 1940. Cloth, \$0.75.

The first half of this book consists of informal and sketchy reports of the reception of evacuated children and is quite interesting. It is encouraging and worth reading, but do not look for advice or information about how to do it.

The latter half, more or less, is devoted to discussion with illustrations of psychic maladjustments of a kind common out of, as well as in, war. Insecurity is the main item. This part is also somewhat interesting. Of course it is a book for laymen—nicely written.

WALTER D. LUDLUM

**Your Brain and Its Story.** By R. J. A. Berry, M.D. Duodecimo of 165 pages, illustrated. New York, Oxford University Press, 1939. Cloth, \$2.50.

This book is the outcome of a lecture delivered by the author before a psychology association. In the words of the author he was to make clear such a complex subject as neurology by drawing on the average person's familiarity with electricity, chemistry, and business. Consequently the book has been designed and intended for the lay rather than the medical public.

It is a small, easily readable book of 158 pages with sufficient illustrations, thirty-six in number, to clarify the text. The brain is considered too much from an anatomic angle with little physiologic analysis, as the researches of Pavlov and of other modern experimental physiologists are ignored. The book may satisfy the laity.

HAROLD R. MERWARTH

**The Outbreak of Polymyelitis, City of Buffalo, 1939.** By Francis E. Fronczak, M.D., commissioner of health. Quarto of 48 pages, illustrated. Buffalo, New York, Department of Health, 1940. Paper.

This book consisting of 53 pages and accompanied by a separate roll of nine large graphs is concerned with a report of the investigations made by the authors during the epidemic of polymyelitis which occurred in Buffalo during the summer and autumn of 1939. The inquiry carried out followed well-established lines including a study of the geographic distribution of the cases within the city, the meteorologic conditions prevailing at the time of the epidemic, and the economic status of the families in which cases occurred as well as the conditions of sanitation and housing in which they lived. The sources of food supply and the methods of household refrigeration and of refuse disposal were not forgotten, nor was the possibility of the transmission from bathing water, household pets, or rodents.

In reading the report certain observations seem significant. A longer incubation was observed in older patients, and the disease incidence was much more prevalent in the male sex for the age group under 21 years and in the female sex for the age group over 21 years. A high proportion of cases, over 80 per cent, lived in one or two family houses. There was an apparent relation between days of high temperature and the daily increment of cases. Numerous authentic instances are recorded of the role played by the healthy carrier in the conveyance of the infection.

Several suggestions are made by the authors for the control of future epidemics and for the guidance of the National Foundation. These deductions appear entirely warranted by the observations recorded in this and other epidemics. It seems that in this report the authors have contributed to our knowledge of the epidemiology of polymyelitis.

JOSEPH C. REGAN

**Report on the Sex Question.** By The Swedish Population Commission. Translated and edited by Virginia C. Hamilton, M.D. Octavo of 182 pages. Baltimore, Williams & Wilkins Co., 1940. Cloth, \$2.00.

A commission on population was appointed in Sweden in 1935 to analyze various population

problems, their causes and their consequences, for the purpose of eliminating the imminent probability of continued and drastic decline in population, a matter of utmost significance, particularly in Europe

The commission reports, in a manner simple, concise, and instructive, particularly through the use of much statistical data and tables, that the decline is the result of voluntary rather than involuntary birth control. Such family limitation has been found to be caused by the change to industrial and city life and to a raised standard of living and sense of culture. The solution to the problem, therefore, is to so effect social and economic reforms as to minimize the reasons for child limitation and to inculcate the people with ideals of wholesome and happy family life. To that end the commission outlines an instructive analysis of the problem of sex with particular attention to the teaching of unarmful contraceptive methods and sex hygiene with a view to individual as well as social happiness in mind.

SAMUEL L. SIEGLER

**The Practice of Medicine** By Jonathan C. Meakins, M D. Third edition. Quarto of 1,430 pages, illustrated. St Louis, C V Mosby Co., 1940. Cloth, \$10.

The third edition of this valuable and satisfactory textbook appears two years after the second. It has been thoroughly revised and incorporates the notable advances of the interim.

The chemotherapy of pneumonia has evolved rapidly, and so we find in this volume a good account of sulfapyridine (dagegan), but the publication was too early to include mention of sulfathiazole. The author briefly presents serum therapy and advances the opinion that the "ideal treatment," particularly in severe cases, is the use of type-specific serum and chemotherapy.

MacLachlan's experience with hydroxy-ethyl-apocupreins in pneumonia is cited. This quinine derivative appears to be nontoxic and useful particularly in the presence of bacteremia, mortality 10 to 12 per cent.

Throughout the volume runs the vein of the author's physiologic approach to disease, and it is this which characterizes the work. The 562 well-chosen and well-presented illustrations call for a glazed paper, hence the weight of the book is  $7\frac{1}{2}$  pounds.

Meakins' volume has quickly achieved a high point in the regard of internists and has taken its place on the shelf with Osler and Cecil.

FRANK BETHEL CROSS

**Diseases Affecting the Vulva.** By Elizabeth Hunt, M D. Octavo of 215 pages, illustrated. St Louis, C V Mosby Co., 1940. Cloth, \$4.00.

This is a small but comprehensive volume on vulval affections written by a dermatologist for gynecologists and general practitioners. She points out that diseases of the vulva are almost entirely cutaneous affections and that the literature up to now has been widely scattered. Vulvitis is not a synonym for dermatitis. The gynecologist will profit by reading this book. The text is simple and clear, and the plates are beautiful.

CHARLES A. GORDON

**Rose & Carless Manual of Surgery.** Sixteenth edition edited by William T. Coughlin, M D. Octavo of 1,608 pages, illustrated. Baltimore, Williams & Wilkins Company, 1940. Cloth, \$9.00.

This long-famous textbook of general surgery has again been completely revised and brought up to date. The first eight chapters have been entirely rewritten and somewhat condensed. This is a welcome change since so many texts in surgery, in their initial chapters, read more like treatises on bacteriology and hematology than surgery. The author rightfully feels that the student and surgeon should refer to special texts for detailed information concerning associated subjects. Many new illustrations and several new color plates have been added, making a total of more than 250, thus greatly facilitating a real understanding of the various surgical conditions. While some subjects have been combined or condensed, much new matter has been added, especially in the matter of fractures and abdominal surgery, and one would have to consult special monographs to gain more clinical information than that found in Chapter XXVII dealing with infections of the brain and its membranes.

A final but by no means less important chapter is that dealing with the conduct and dangers of anesthesia, the various kinds of anesthetics and the methods of administration. As a ready and complete reference volume, this clear and concise text should continue in the top rank for students and practitioners alike.

ARTHUR GOETSCH

**Clinical Urology.** By Oswald S. Lowsley, M D, and Thomas J. Kirwin, M D. Two volumes. Octavo of 1,684 pages, illustrated. Baltimore, Williams & Wilkins Co., 1940. Cloth, \$10.

This two-volume work of some 1,600 pages represents the latest textbook from Dr. Lowsley, Dr. Kirwin, and their associates at the Department of Urology (James Buchanan Brady Foundation) of the New York Hospital. The authors dedicate the book to the generous benefactors of Brady, Lawrence, and Wright, whose bequests have made possible for a considerable period of time extensive clinical and research activities, which form the basis of the valued contributions.

The book, while intended primarily for medical student, practitioner, and surgeon, should prove useful and helpful to the urologist as well. The work is well arranged and well written and is essentially one of surgical urology, including many chapters on diagnosis. Surgical operative technic is the chief feature, and the numerous illustrations have been beautifully executed by Mr. William P. Didusch. Photomicrographs and pathologic sections are reduced to a minimum to conserve space. Another feature is the addition of a bibliography at the end of each chapter.

The reader cannot fail to be impressed with the numerous contributions which the director, Dr. Lowsley, and his staff have made to the advancement of urology as a specialty.

AUGUSTUS HARRIS

**A Textbook of Pathology.** By W. G. MacCallum. Seventh edition. Octavo of 1,302

pages, illustrated. Philadelphia, W B Saunders Co, 1940 Cloth, \$10

The same high degree of excellence is maintained in this edition, four years after the last for its illustrations, photographs, and color plates, these serving to emphasize that both content and arrangement are worthy and guiding. Changes are few but completely adequate in bringing the text abreast of the present. A popular student text, its general usefulness recommends it further.

IRVING M DERBY

**Obstetrics in General Practice** By J P Greenhill, M D. Octavo of 448 pages, illustrated. Chicago, The Year Book Publishers, 1940 Cloth, \$3 50

This practical book on obstetric practice, with emphasis on diagnosis and treatment, is a companion volume to the author's work, *Office Gynecology*. Historical data, controversial discussions, extensive descriptions of anatomy and pathology, and conditions rarely encountered are omitted. The abundant illustrations and simple clear style of the text should make the book valuable to the physician who practices obstetrics.

The obstetric specialist will find little not already known to him, and for the student the text may not be sufficiently academic to suit his needs. General practitioners, however, should profit by it, and, if this knowledge were known to them, maternal and fetal mortality and morbidity would undoubtedly decrease.

ALEXANDER H. ROSENTHAL

**The Neuroses in War** By Several Authors. Under the Editorship of Emanuel Miller, M.A. Octavo of 250 pages. New York, Macmillan Company, 1940 Cloth, \$2 50

This excellent book is an exceedingly timely one. Without being too dogmatic it presents the opinions of several competent observers during the last World War of the effects of war on civilians and soldiers.

It should prove of inestimable value to all medical men who may be concerned with mental health in this present world crisis. The authors present the problems in a practical manner and give us a much better understanding of the treatment of such states as "shell shock," "effort syndrome," etc.

While the book is the result of collaboration of several authors, there is a cohesion and continuity to it which speaks well for its editor.

JOSEPH L ABRAMSON

**The Theory and Practice of Anaesthesia.** By M D Nosworthy, M D. Duodecimo of 223 pages, illustrated. New York, Chemical Publishing Company, 1940 Cloth, \$4.25

This book appears to be intended for the use of those who are learning anaesthesia. The author emphasizes the importance of learning the principles of anaesthesia with the simpler, old-time fundamentals for study. Here he conforms to the older British custom which some anaesthetists in Great Britain seem to be discarding. Improvement in anaesthesia has produced a multiplication of methods which bewilder the

beginner and sometimes the experienced, and to add to this perplexity there is also a divergence of opinion about which is best. The author helps the student to sift out the advantages and indications for each method or agent, and he has his opinion on his own personal experience. The discussion of the physiology of anaesthesia covers the latest theories of a much debated question, and shock is given a chapter for its anesthetic connotation.

Anesthesia practice in Great Britain apparently follows the same general lines as in this country. Along with the usual inhalation anesthetics, the harthurate group and spinal anesthesia all seem to have their usual places.

G W TONC

**Multiple Human Births** Twins, Triplets, Quadruplets, and Quintuplets. By Horatio H Newman, Ph D. Octavo of 214 pages, illustrated. New York, Doubleday, Doran & Company, 1940 Cloth, \$2 50

The author, a professor of zoology, has written this most interesting book on multiple human births in language scientifically correct and yet within the understanding of the layman. There are many books on this subject, but this is the only one written for the general reader which covers the whole field so that it is adequate for reference.

The volume is fascinating reading for those who are interested in twins, be the interest intimate or remote. Here can be found the answer to all questions in regard to the subject. While the language of the book is simple, the scientific facts are correct. Even if the only interest the reader has in multiple births is the Dionne quintuplets, still we are sure that the book will not be laid away until it has been completely read.

WM SIDNEY SMITH

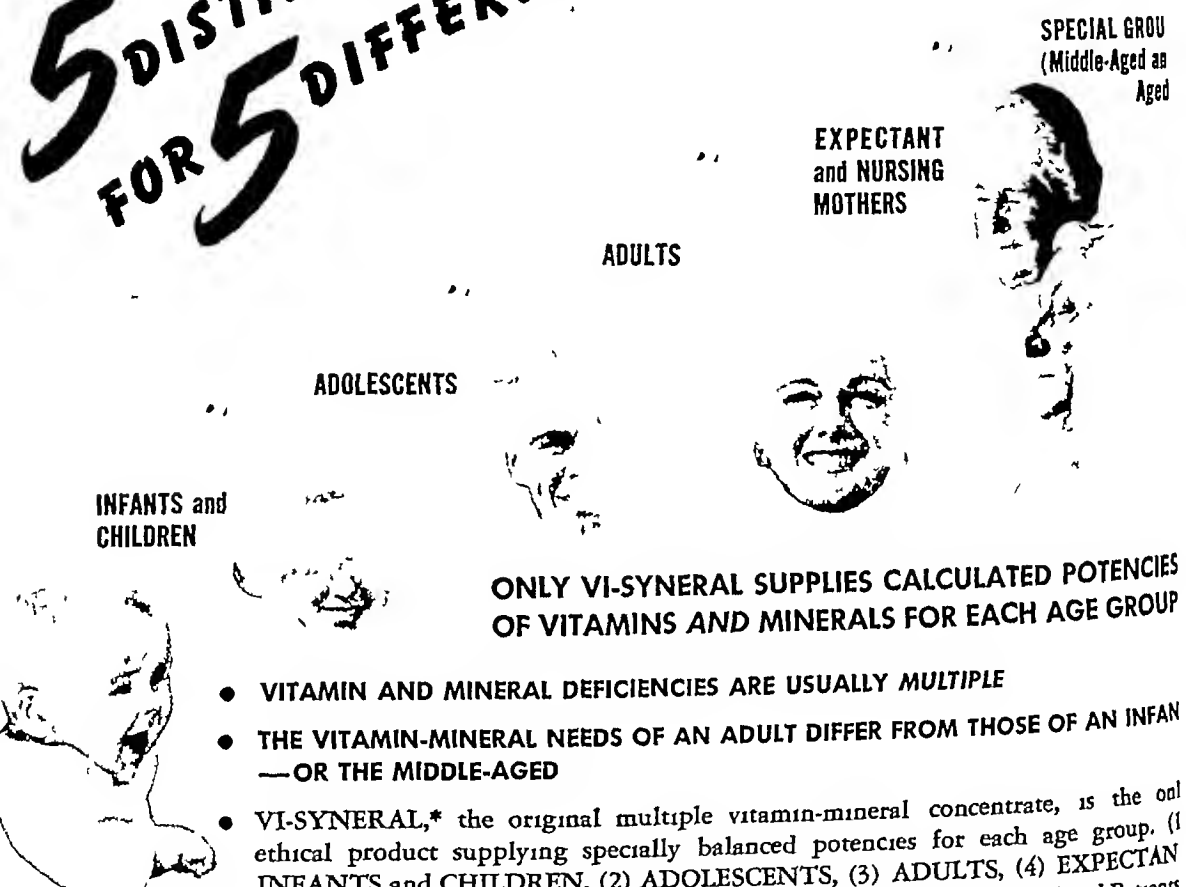
**Pathogenic Microorganisms. A Practical Manual for Students, Physicians and Health Officers** By William H Park, M D, and Anns W Williams, M D. Eleventh edition. Octavo of 1,056 pages, illustrated. Philadelphia, Lea & Febiger, 1939 Cloth, \$8 00

Since its very inception in 1899, this work has been an authoritative publication and in the keeping of eminent workers. The present volume may well be termed a memorial edition, since it is the last to appear with Dr Park as collaborator and stresses his meritorious activities. The general and practical amplitude of each edition is too well known to all workers in bacteriology and allied sciences for elaboration of the present one. Bringing up to date every available item in a rapidly enlarging subject, particular sections are new or almost entirely rewritten. Notable are the subjects of bacterial variation, yeasts and molds, protozoa, and filtrable viruses. The bibliography is still further enlarged by communications of these last years. Recommendations are ostentatious for such a standard work.

IRVING M DERBY

**Controlled Fertility** An Evaluation of Clinic Service. By Regine K. Stux, M D, and Frank W Notestein, Ph.D. Octavo of 201 pages, illustrated. Baltimore, Williams & Wilkins Co, 1940 Cloth, \$3 00

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[Continued from page 519]

It is the purpose of the authors to offer statistical data derived from actual study of various groups of individuals (vocational, educational, religious), rather than by the erroneous method of anonymous questionnaire, to evaluate the services of a birth control clinic.

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The statistical tables and charts used are detailed and instructive, but many of them, although easily comprehensible to the statistician, are too involved for general reading. The volume is an excellent treatise on the aims and accomplishments of birth control groups.

SAMUEL L. SIEGLER

**Management of the Cardiac Patient.** By William G. Leaman, Jr., M.D. Octavo of 705 pages, illustrated. Philadelphia, J. B. Lippincott Co., 1940. Cloth, \$6.50.

This volume is an excellent treatise on the management of the cardiac patient. The reviewer appraised it by looking up problem after problem that might be met in office and hospital practice and found each subject handled in a sound, practical, and conservative manner. The arrangement of the material is good, and it is especially pleasing to note that the etiologic classification has been followed. It is difficult to pick out chapters of special merit. That on syphilitic cardiovascular disease is excellent.

The author has produced a work that is fundamentally sound and should be of practical value to practitioners of medicine.

E. P. MAYNARD

**Diseases of the Digestive System. A Textbook for Students and Practitioners.** By Eugene Rosenthal, M.D. Octavo of 394 pages, illustrated. St. Louis, C. V. Mosby Co., 1940. Cloth, \$8.50.

With 234 illustrations on 384 pages, this book is probably the most profusely illustrated treatise yet published on diseases of the digestive system. While this feature seems to add clarity to the text, it does appear to make the treatment of the material too simple and elemental. Without entering into a discussion over the merits of the material itself, one notes that the medicaments mentioned are much too frequently European rather than American in origin. On the whole the book is interesting but fails to fulfill its purpose of providing an adequate textbook in the field of gastroenterology for him who needs it most—the nonspecialist in the diseases of the digestive system.

BENJAMIN M. BERNSTEIN

**Foreign Bodies Left in the Abdomen. The Surgical Problems, Cases, Treatment, Prevention. The Legal Problems, Cases, Decisions, Responsibilities.** By Harry S. Crossen, M.D., and David F. Crossen, LL.B. Quarto of 762

pages, illustrated. St. Louis, C. V. Mosby Co., 1940. Cloth, \$10.

All surgeons and operating-room nurses should familiarize themselves with this book before starting their careers. However, at this early stage they will probably feel that the grave dangers enumerated and the painstaking methods devised to prevent such accidents are exaggerated. It would, therefore, be well for them after a short period of active work to go over the book again. Hospitals might find it an economy to keep copies handy in their operating suites and libraries.

The volume is the work of two authors, one presenting the medical and the other the legal point of view of this tragic subject. It is important that the surgeon should understand his exact legal, as well as moral, responsibilities.

The reviewer believes there is one small defect in that the title specifies the abdomen, whereas, the book itself goes further and covers the rest of the body. The complications following a foreign body left in the abdomen are probably more often fatal to the patient than those left under the flaps of a mastectomy closure, in a hernial repair, or even within the pleura, but the legal consequences to those responsible are almost the same.

We feel the most important function of this carefully prepared book is to call to the attention of the experienced, as well as the tyro, the ease with which foreign bodies may be left in the patient and the tremendous discipline necessary to even approach perfection in preventing this all too common accident. The frequency of this tragedy needs all the emphasis here given by the listing of hundreds of reported cases, particularly when it is considered that a far greater percentage probably never appears in the literature.

W. M. H. FIELD

**The Chemical Composition of Foods.** By R. A. McCance and E. M. Widdowson. Octavo of 150 pages. New York, Chemical Publishing Company, 1940. Cloth, \$2.50.

Research studies in human nutrition demand that there be exact knowledge as to the chemical composition of foods, not only qualitative but quantitative. McCance and Widdowson have arduously produced such data and earned through a rather thankless job, save to the investigator who must immediately know the magnesium content of artichokes or the sodium content of boiled new potatoes as compared with old potatoes.

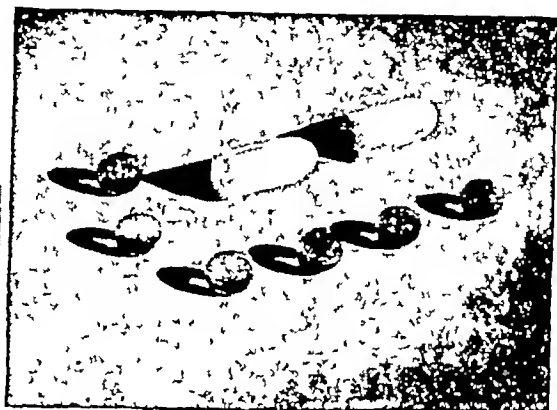
From the American point of view the most valuable portion of the handbook is that which gives the complete quantitative composition of 100-Gm. portions of an endless variety of foods both raw and cooked. The statistical data in ounce-quantities of foods are of less usefulness because of the fact that a conversion factor of 28.4 Gm to the ounce has been used rather than the conventional 30 Gm per ounce. Similarly, the values of recipes of the English dietary would in general be different from those of dishes used in this country. However, for straight fact on food analysis this book is unsurpassed.

GEORGE E. ANDERSON

**Hugh Young. A Surgeon's Autobiography.** Octavo of 554 pages, illustrated. New York, [Continued on page 523]

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<sup>1</sup> Sevringhaus E. L. and Evans J. S. *Am J M Sc* 178 638 Nov 1929

<sup>2</sup> Novak, Emil. *Surg Gynec & Obst* 70 124, Jan. 1940

For literature address the Professional Service Department,  
E. R. Squibb & Sons, 745 Fifth Avenue, New York, N. Y.

[Continued from page 521]

Harcourt, Brace and Co., 1940 Cloth, \$5 00  
This is the life story of Dr Hugh Hampton Young, the distinguished urologist and surgeon, of Johns Hopkins and associate of the "Immortals,"

The chapter, captioned "Developing a Specialty," traces the story of the rise of urologic craftsmanship to the dignified position it holds today in American surgery. It is about this chapter that there may be some controversial discussion, because Dr Young has included a rather full description of the technic of many of his surgical procedures, with, at times, a simplified terminology for the lay reader. Thereafter follows the story of the James Buchanan Brady Urological Institute, with a detailed account of the life and personality of Diamond Jim Brady, whose financial contributions made the building possible and for whom the institute was named.

Something more than a fifth of the book is devoted to the varied experiences of Dr Young in the World War of 1914 to 1918, from which he emerged as Colonel, D S M., having contributed much to the urologic and the venereal problems of the A E F. Many of the personal reminiscences and intimate contacts with military and medical matters make interesting reading.

The reader will be astonished at the extent and the variety of the extracurricular activities of this busy surgeon. Music, art, opera, adequate hospital facilities for the tubercular and insane patients—to all of these, Dr Young found time to give the benefits of his prestige and his wide social and personal connections. Toward the close of the book he tells of more intimate things—his extensive travels, his interest in hunting and fishing, and his family. After a life so full of diversified interests and activities, it is significant of the man when he says "But my real life—my greatest happiness and my most thrilling experiences—has been at the Brady Urological Institute."

J RAPHAEL

Office Urology. With a Section on Cystoscopy. By P S Pelouze, M D. Quarto of 766 pages, illustrated. Philadelphia, W B Saunders Company, 1940 Cloth, \$10

This is an excellent book on urology as practiced in an office and is descriptive of the usual office routines. It is easy and pleasant reading. It would be a worthwhile book if only for the helpful hints and explanations of the fundamentals and simple procedures that most of us take for granted and which we have learned through bitter experience rather than from the written word.

One can forgive the author for straying from the beaten path of strictly office procedures at times, such as the description of culture methods and of roentgen ray in diagnosis. The latter is glossed over in a few pages.

The physiology and diseases of various organs are discussed more comprehensively in many other volumes on the subject, but the introductory remarks discussing the instruments used in an office and the arrangement of furniture and of rooms are excellent. The chapters on history-taking and examination of patients are exceptionally good. The

chapter on sexual problems is interesting and refreshing and should be studied by every practicing urologist.

FEDOR L SINGER

Methods of Treatment. By Logan Clendening, M D., and Edward H Hashinger, M D. Seventh edition. Octavo of 997 pages, illustrated. St Louis, C V Mosby Co., 1940 Cloth, \$10

The seventh edition of Clendening's deservedly popular book on treatment carries the name of Edward Hashinger as junior author, with twelve other collaborators in special fields. It may be said at once that it is an excellent book and will be found useful by physicians throughout the country. The style, especially where it bears the imprint of Clendening's personality, is often witty and pungent, but there are still a few old-fashioned terms employed. Medicaments are still "exhibited" and sprays are "grateful."

It is inevitable where there is so much collaboration that there should be some unevenness in the chapters and even some variation in the advice given. On page 154 the impression is distinctly given that morphine is the drug of choice in asthma, on page 630 this impression is fortunately corrected, and on page 633 the warning is finally given (although not as forcibly as the reviewer would wish) that the drug is positively dangerous in bronchial asthma. Nitroglycerin is not mentioned in the treatment of gallbladder colic, no mention at all is made of amidopyrine, even to warn against its indiscriminate use, novasurol is still listed among the mercurial diuretics, while no mention is made of the mercupurn type of diuretic. These, however, are minor defects in a volume that otherwise maintains a high standard throughout. If it could be somewhat shortened and the cost reduced correspondingly, this work of Clendening's would probably be found in the great majority of medical offices.

MILTON PLOTZ

Diseases of the Urethra and Penis. By E D'Arcy McCrea, M D. Octavo of 306 pages, illustrated. Baltimore, Williams & Wilkins Company, 1940 Cloth, \$8 50

This book gives in detail the present-day knowledge of the diseases of the urethra and penis.

Every lesion of the urethra and penis, whether of inflammatory, neoplastic, or traumatic origin, is described and treatment is outlined.

It has a complete bibliography. The book is well written, thoroughly up to date.

PHILIP GOLDFADER

Loose-Leaf Specialties in Medical Practice. Chapter on Dermatology and Syphilis. By Svend Lomholt, M D., and James L Miller, M D. Octavo. Pages 935 to 1072. New York, Thomas Nelson & Sons, 1940

Because of war conditions in Europe, this chapter was delayed but is now ready for distribution. The supplement contains a comprehensive survey of the various dermatoses met in general practice. The section on dermatology is excellent. Among the more important conditions, one finds such subjects discussed as aller-

[Continued on page 527]

## Travel in Medicine

RECENT FIGURES released by the Department of State and published in *The Travel Agent*, leading trade publication of the travel industry, provide an interesting and illuminating breakdown on users of passports during the year of 1940

Of the total 26,253 passports issued during the twelve months (hold your breath) the laboring class used 3,635 or approximately 14 per cent of the entire number granted Americans going abroad. Housewives came second with 3,194, students third with 2,270, and office workers fourth with 1,840. The "unemployed" (at least they claimed no occupation) ranked fifth with a total of 1,809 travelers.

Doctors were listed about a third of the way down, in twelfth place, with 459 passports issued to them, and nurses in eighteenth place numbered an even 400.

The "object of travel" pertaining to the 26,253 passports granted, is interesting too. More than a third, 10,380 to be exact, were traveling for pleasure entirely. 12,249 traveled strictly for personal or other business reasons. 3,439 journeyed to new posts of employment and 185 were traveling for their health (no indication made of how many were fugitives for their health).

Under "destination," another breakdown of the total passports taken out during 1940 showed 15,508 going to Latin American countries, 5,291 to the Far East, 1,945 to Bermuda, 1,528 to Western Europe (obviously not for pleasure), 728 to Canada and Newfoundland, 607 to the Near East, 570 to Australia and New Zealand, 396 to Africa, and (decidedly not for reasons of health) 48 voyaged to Eastern Europe.

In passing over these figures, it is interesting to note the effect World War II has had on travel abroad. In 1938 the total passports granted numbered 134,737. Doctors numbered 2,071 and nurses 1,872. Western Europe (with no war imminent) received the lion's share of this travel with 110,572—82 per cent as compared with the 1,528 or only 6 per cent in 1940. Latin America alone has profited, for some 5,000 travelers have been diverted to the south lands which now enjoy first place

in the destination of Americans traveling outside our borders.

While the figures of both war and pre-war years tend to subordinate the classification of "doctors" as merely a fair travel-conscious class, a true analysis reveals that as a group doctors are more generally active travelers than any other distinct group of individuals. Using the figures for last year, among all individuals of adult age approximately only one in every 3,000 were travelers abroad, while one doctor out of every 380 traveled outside of the United States.

Before the war, on a purely commercial basis, the doctor was recognized as America's No. 1 Traveler. Even the new, general World disturbances haven't changed that apparently. Not only was he considered the topnotch user of travel services himself, he was also regarded highly as a travel promoter as well. Not at all strange, for almost since the dawn of medicine, the doctor has been prescribing travel as a stimulant for restoring health in body and spirit.

The small number traveling for health, quoted in the "travel census" just outlined, is not too insignificant. Viewed from the angle of limitations and aversions to ocean travel due to imagined or real war hazards, it is surprisingly good. There is no record to show that the entire 185 were voyaging because of a direct recommendation of a physician, but it is logical to assume that no person in ill health would venture on a journey of any kind without first seeking the advice of a doctor.

Whether "Travel in Medicine" will become even more important in the years following the resurrection of World Peace, it is difficult to predict. Even now, though limited largely to the Western Hemisphere, "travel" should be playing a very important part in medicine. Besides the element of personal interest, medical practitioners should be concerned in the professional, educational, and therapeutic aspects as well.

Where and how an individual travels is just as important from a standpoint of health as it is from one of safety.

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[Continued from page 523]

gens in various occupations, exfoliative dermatoses, pyococci and filterable viruses affecting the skin, neurogenic lesions, avitaminoses, and tuberculous and syphilitic of the skin.

The section on syphilology discusses the various forms of treatment. The recent five-day treatment by intravenous drip for twelve hours each day is cited. Also the reactions and prevention of reactions in all forms of treatment is mentioned. There are 75 good illustrations in this chapter. The set is now complete in two volumes and is a condensed encyclopedia of the specialties in medical practice for the general practitioner.

MAURICE J DATTELBAUM

**Principles of Hematology with 104 Illustrative Cases and 167 Illustrations, Including 173 Original Photomicrographs and 100 Original Charts and Drawings.** By Russell L Haden, M D. Second edition. Octavo of 362 pages, illustrated. Philadelphia, Lea & Febiger, 1940. Cloth, \$4.50.

The second edition of this masterpiece differs from the first in but few significant changes, illustrative cases have increased from 100 to 104, illustrations from 155 to 167, original photomicrographs from 168 to 173, and original charts from 95 to 100. Haden takes a subject which is ordinarily regarded as difficult by the student and makes it simple. This he accomplishes by his original diagrammatic portrayals of the important blood dyscrasias and by the use of illustrative cases. It is easy to recommend this book because it is a pleasure to read. The biophysics of the red cell is illuminating. The approach to the entire subject of blood formation and destruction is incomparable. Authors in other subjects would do well to use this treatise as a text in method of presentation. This book has what most others have not.

MAURICE MORRISON

**Vitamin Therapy in General Practice.** By Edgar S Gordon, M D, and Elmer L Sevringhaus, M D. Octavo of 258 pages, illustrated. Chicago, The Year Book Publishers, 1940. Cloth, \$2.75.

A great many books, reviews, and separate articles have appeared within the last few months dealing with theoretic and clinical applications of vitamins. Only too often such papers help to confuse one and have altogether too many varying opinions. To those who are still "at sea," as well as to those who would like a handy reference book which adheres as closely as is possible to important and proved facts, this small volume by Gordon & Sevringhaus will come as a great boon. For the latest and best opinion on clinical and laboratory applications of vitamin therapy, this book, in the reviewer's opinion, has no peer. It can be most warmly recommended.

ANDREW M BABY

**A Manual of Embryology. The Development of the Human Body.** By J Ernest Frazer, F.R.C.S. Second edition. Octavo of 523 pages, illustrated. Baltimore, Williams & Wilkins Co., 1940. Cloth, \$9.00.

Without a rather thorough preliminary groundwork in embryology this book would be most

difficult for the average student. However, when we assume the presence of such a basis, the book becomes a valuable and quite necessary addition to the library of a student of gross anatomy conscious of developmental processes. In general the text is thought-provoking. Many of the illustrations depart from the conventional type and thereby suggest new approaches to a more thorough understanding of the subject. A serious defect is the lack of a bibliography. An outstanding chapter is that on the development of the face.

GEORGE H PAFF

**The Bacteriology of Public Health.** By George M Cameron, Ph D. Octavo of 451 pages, illustrated. St Louis, C V Mosby Co., 1940. Cloth, \$3.50.

There is a good deal of useful information in this book, but all the subject matter is presented in too brief a fashion. As a "review text" it could be of help to students who have had a well-rounded course in bacteriology. It could be recommended as a text for beginners in bacteriology only in the event that a very complete and comprehensive lecture course accompanied it.

MORRIS L RAKIETEN

**Why Men Behave Like Apes and Vice Versa, or Body and Behavior.** By Earnest A Hooton. Octavo of 234 pages, illustrated. Princeton, Princeton University Press, 1940. Cloth, \$3.00.

Professor Hooton's latest book is an odd mixture of modern science and primitive sociology. It is a new statement of the author's sincere but extreme point of view on mental inheritance in which the Harvard eugenicist insists on the inseparability of mind and body and denies the environmentalist approach of social conditioning. The book includes considerable data on anthropoid behavior and human evolution, from which the author concludes that "behavior is indissolubly associated with organic structure." He pleads for the adoption of a strong positive eugenic program as the only means of saving the human race. Perhaps of most interest to the scientist is the last section which deals with anthropometrics, particularly with the somatotype method which classifies individuals according to bodily build.

Dr Hooton's material is interesting, but his radical conclusions are open to considerable argument. The book is written in the author's usual witty and entertaining style and is well worth reading by anyone interested in anthropology and eugenics.

MILTON PLOTZ

**Microbiology and Pathology.** By Charles F Carter, M D. Second edition. Octavo of 755 pages, illustrated. St Louis, C V Mosby Co., 1939. Cloth, \$3.25.

There have been numerous changes in this edition, all adding considerably to the efficiency of an already popular text for nurses. Greenish tinted paper, spacing of print, and general arrangement signify the thoughtful presentation of material well correlated for two such subjects. Laboratory exercises, review questions, and references given at the end of each chapter should prove valuable.

IRVING M DERBY

# A Guide to Select Schools



SCHOOLS OF REFINEMENT WITH HIGH RATING IN EDUCATIONAL AND CULTURAL ADVANTAGES

## Preschool Training of the Deaf

In the February issue of *The Volta Review* there appears a translation from a Russian article "Life of the Deaf"

It treats with the training of deaf-mutes of preschool age and emphasizes greatly, the importance of home direction and help for the young one. The author, Natalie Rau, states that "mothers have to be convinced that only well-trained work with the child can create or restore speech, but that hearing cannot be fully regained because

no physical, no medical action can restore a paralyzed or shattered hearing center"

It is explained to the mother that a hearing aid might help develop a beginning of hearing and train attention to hearing, but there are many things the mother can do and should do to prepare the child for the kindergarten class of the special school of training

The mother is instructed in simple fundamentals of teaching lip reading, imitation of speech, exercises of developing attention to the voice, sounds and words, and for arousing an interest in hearing

Unquestionably, the family physician is the first person consulted in these unfortunate cases. Perhaps for no other reason, he shoulders the greatest responsibility of directing the child's life right from the beginning, and upon his interest rests the ultimate possibility of a deaf mute being able to live a normal life with those who speak and hear naturally

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(Continued from page 430)

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# NEW YORK STATE JOURNAL OF MEDICINE

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VOLUME 41

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## Editorial

### New Zealand Acts

Without stressing the other many objections of the medical profession to free medical care (*state or tax-paid medical service*), let us again state the fundamental one that any tax-paid minimum wage or fee scale tends to promote incompetency. It does so by discouraging participation of the better qualified by the low rate of return on original investment in education and on time expended in practice. It provides enough return, however, to maintain in practice on a quantity production basis the less well qualified who have no ethical scruples against turning out work on that basis with little regard for quality.

It is understood, of course, that the *New York Times* has no choice but to print "all the news that's fit to print." Admiring, as we do, its high standards and integrity, we are the better able to appreciate the shudder, the gasping respiration, the cold sweat and enfeebled pulse, the pallor, the clammy shivering, and the wave of editorial nausea which must have swept the organization from the wire desk to the press men, from the science writers to the copy boys, when, on February 21, 1941, a dispatch by wireless told of the announcement by the Health Ministry of New Zealand that over the protests of physicians the "national free medical care" plan will start March 1. "When doctors send the (registration) cards to the health officials they will receive \$3.50 for each patient and travel allowances for journeys of

more than three miles in cities and twenty miles in the country. Doctors must provide suitable surgery accommodations and *visit every patient whose condition makes it impossible for him to come to the doctor*.\* Until other arrangements are made they must supply drugs, for which they may charge patients. Dr. James Jamieson, leader of the doctors, said there were not enough doctors to operate the plan here. It is believed the government expects the plan will be adopted by country doctors, leading to a gradual extension to all areas. It is estimated that the payments would give *even unsuccessful doctors the equivalent of \$700 yearly*."\*

The public has been appealed to by the Health Ministry "not to make unreasonable demands on doctors and to consult them as far as possible in their offices." With which appeal the Health Ministry will retire, washing its hands according to precedent, to the business of making rules and regulations, prescribing forms, reports, accounting systems, penalties, setting up a business administration, receiving bids on offices, administration buildings, supplies of paper, ink, accounting machines, filing cabinets, docket folders, paper clips, and typewriter ribbons, looking over printing bids, applications for clerical positions, inspector's jobs, compiling manuals of procedure, acceptable drugs, working out mileage rates, setting up zones, in

\* *Italics ours—Editor*

fact doing all those necessary and indispensable little things which must be done to make tax-paid, free medical care the efficient and up-to-date political spending machine it has proved elsewhere to be. The Health Ministry hopes that its appeal to the public will be heeded. It always does, but, really, that is all that the Health Ministry can do, isn't it? "Come again, Mrs. Citizen, when we are not so busy, it's up to the doctors to make the plan work, you know, they are paid to do that, aren't they? Three dollars and fifty cents and allowances, why, *even unsuccessful doctors can earn the equivalent of \$700 yearly* under the

plan, and that should be ample to keep them unsuccessful for many, many years. What if you *don't* like them? Just pay your tax and don't call them. That's all today, can't you see we're busy? Call again."

Now we do not see always eye-to-eye with the *Times* as to the best means of improving medical care for the American people. But it is our hope that, recovered from its initial shock, the *Times* will agree with us that however we shall eventually solve our domestic problems in medical care it must not be by the tax-and-be-damned method of free medicine adopted by New Zealand.

## Who Wants It and Why?

We are reliably informed that, at a recent conference of legislative committees of the Medical Society of the State of New York in Albany, the chairman of an important committee of the legislature remarked that he, personally, had never received from any *individual constituent* a letter or other communication asking for compulsory "health" insurance at any time during the last eight years.

If this is so in one instance, it may be equally true in many. It raises an interesting point. If no individuals ask for it, demand it, who does want it and why? Bills to *compel* it by law are constantly being introduced into Congress and the various state legislatures. Exhaustive inquiry reveals that physicians do not favor it, have not asked for it, medicine, in fact, claims that it does not and cannot exist,<sup>1</sup> that even if the proposed bills were enacted into law *sickness insurance* would result, not *health insurance*.

"The Law," said the late Mr. Gilbert, "is the true embodiment of everything that's excellent. It has no kind of fault or flaw." And, consequently, were the law to enact compulsory "health" insurance (as recently in New Zealand), it would be *compulsory health insurance*.

Who are we to raise questions of fact in this pleasant era of armed transcendentalism? But we *can* ask who wants the cursed thing whatever it is, and why? Apparently, except in certain cases, individuals do not, medicine does not, but, according to the *Times* of January 19, 1941, the American Association for Social Security and the New York Permanent Conference on Social Security do. Senator Capper (Kansas), Dr. Bertram Bernheim, Mr. Robert Watt, Senator Daniel Gutman, and Assemblyman Robert F. Wagner, Jr., the Consumers' League of New York, the National Federation of Settlements, and the United Neighborhood Houses of New York do among others, including, it is said, the A F of L and the C I O.

Why do they want it? Why do all these organizations cry for it in the wilderness? Why did Bismarck want it for the German people and get it? Why did Lloyd George want it for the English people and get it? Has *compulsion* a fatal lure for all men at some time? Perhaps. But

"Give you a reason on compulsion!  
If reasons were as plentiful as black-  
berries, I would give no man a reason  
upon compulsion."<sup>2</sup>

<sup>1</sup> See New York State J. Med. 41:333 (Feb. 15) 1941.

King Henry IV. Part I. Act II. Scene 4.

## "War Medicine"

A new medical journal has appeared. It is one of the most timely periodicals ever to be published. While we have, from time to time, suggested that the profession be informed and be given instruction in all phases of medical preparedness, it remained for our parent organization, the American Medical Association, to initiate *War Medicine*. The NEW YORK STATE JOURNAL OF MEDICINE welcomes it and extends to it sincere wishes for its success in its appointed task.

It came to us aborning with an excellent "table of contents." From the gossip gleaned at the christening, the opinion is unanimous that this child has a brilliant future. It represents the will and drive of our profession to give our all to the preservation of our American culture, and those who would destroy it are warned in the words of the prophet Isaiah<sup>1</sup> "Therefore shall evil come upon thee, thou shalt not know from whence it

riseth, and mischief shall fall upon thee, thou shalt not be able to put it off, and desolation shall come upon thee suddenly, which thou shalt not know."

As an uncle, forty-odd volumes old, might we suggest to our newborn nephew, *War Medicine*, or more appropriately to its parent, the A M A, that it train in the art of caring for the disasters that might befall the civilian population during this catastrophe that has been visited upon our world? Might it not also inform us how to instruct our charges in the art of self-preservation during bestial attacks from the aerial monsters we have created? It is well that military medicine be stressed, but those of us who, because of age or military infirmity, remain to care for the non-combatants, must also be instructed. So may we suggest for the development of its career that there be included in its scope "The Role of the Civilian Physician During War?"

Our hearty congratulations on the assured success of *War Medicine*!

## Office Facilities

The articles, published elsewhere in this issue,<sup>1</sup> of Drs James H Sterner and Howard L Prince stress, respectively, a program for detecting toxic responses to organic chemical substances and the importance of office treatment in traumatic surgery. It seems to us that as the hospital facilities of the Nation have increased office treatment of injured men has been increasingly disregarded. While this may have been good practice in ordinary times, it might conceivably create a serious bottleneck were hostilities suddenly to break out.

It is the logical aim of defense preparations to foresee, and to prevent wherever possible, weaknesses in structure and faults in procedure. Our hospitals are normally operating in these times under

nearly peak loads. And it is to be anticipated that the speed-up in manufacturing processes will somewhat increase the normal accident rates in industry, airplane travel, and transportation operation of all kinds. This will undoubtedly increase the hospital case-load under the normal expectancy merely of defense preparations.

What if this country engages actively in war? Inevitably, the normal routing of industrial and other injuries will be dislocated. Inevitably, more traumatic surgery will have to be done in physicians' offices, inevitably, more follow-up and rehabilitation work will have to be absorbed in private offices to buffer the demands on the hospital facilities.

What facilities exist in these offices? What is the condition there of existing

<sup>1</sup> Isaiah, Chap 47 II The Holy Bible New York Bible Society

<sup>1</sup> See pages 594-603

equipment? Immediate treatment is always an advantage in potentially infected wounds. Intelligent use of anesthesia is necessary if this is to be accomplished properly. How many private offices are equipped and staffed to make this possible? Information on this matter would seem to be of the greatest moment to a preparedness program carried on with thoroughness. To the best of our knowledge these resources have not yet been surveyed. It is hoped they will be soon.

The problem of the prevention of absorption and of the detection of toxic

organic compounds is most complex and difficult. Dermatitis has been numerically the most important disability resulting. Methods of detection are discussed in Dr Sterner's paper, but these are mostly laboratory procedures. However, a plan of attack is outlined on the problem of toxic effects where the specific action of the chemical is not known. This should serve a useful purpose for the practitioner who is confronted in the course of his experience with industrial employees whose principal symptom is a dermatosis of unknown origin.

### A New Sulfonamide

The sulfonamide derivatives have proved to be of such success in the management of the acute infections caused by the streptococci, staphylococci, pneumococci, and gonococci that it was but natural that a search be made to discover another radical that might effectively destroy the tubercle bacillus *in vivo*. Feldman, Hinshaw, and Moses,<sup>1</sup> from the Mayo Clinic, report their experiments with the sodium salt of p,p'-diamino-diphenyl-sulfone-n, n'-dextrose sulphonate, which is called "promin."

Fifty adult male guinea pigs were placed on identical diets and were cared for equally in all other respects. For 30 of them promin was added to the daily feed. After the determined concentration of the drug in the blood stream had been reached, the promin was withdrawn for several days and then readministered two days prior to inoculation with tubercle bacilli. All of the control animals died within a period of eighty-two days,

whereas 13 of the guinea pigs who had received promin lived 164 days. Postmortem examinations were still more convincing of the efficacy of this sulfonamide product. The degree of infection, as evidenced by splenic involvement was minimal in 62 per cent of the treated animals, and in only 34 per cent was the tuberculous infection extreme. In other words, the severity of the disease was strikingly less in the animals who had been given promin.

Feldman, Hinshaw, and Moses feel that this drug is capable of inhibiting to a considerable degree the course of tuberculosis in guinea pigs which, upon inoculation, develop extensive lesions. Of course, the work is in its experimental stage, and the study is in the nature of a preliminary report. The hope, however, that this study affords that tuberculosis, like so many hitherto insurmountable obstacles in the progress of medicine, may soon be deprived of its power to create havoc warrants the keen interest of all investigators in the action of this new sulfone compound.

<sup>1</sup> Feldman, W. H. Hinshaw, H. C. and Moses, H. E. *Proc. Staff Meet., Mayo Clinic* 15: 695 (1940).

### Attention All Members

A JOINT announcement by representatives of the New York State Department of Social Welfare and the Council of the Medical Society of the State of New York will be found on page 619 of this issue. It sets forth the coming together of minds of the two organizations on ways to improve provision of medical care of the indigent and near indigent in New York State. The editors hope that all members will study thoroughly the medical plan and discussion of the principles involved and keep the document close at hand for future reference.

## *If You Are Reading a Paper at the 1941 Annual Meeting . . .*

the NEW YORK STATE JOURNAL OF MEDICINE will appreciate your following the suggestions listed below in the preparation of your manuscripts. These suggestions have been devised in order to save correspondence, avoid return of papers for changes, minimize the work of preparation for the printer, and save the high costs of corrections made on galley proof.

**Size of Articles.**—It is earnestly desired that scientific articles shall not exceed ten JOURNAL pages at the outside. Even that number of pages tends to lower reader interest. An average of five or six seems to be the most desirable from this point of view. Calculation can readily be made by multiplying the number of double spaced typewritten manuscript pages by the fraction two-fifths.

**Manuscripts.**—Papers must be typewritten on one side only of white sheets consecutively numbered, and be double spaced with one-inch margins. They should be prepared with great care so as to be typographically correct. All headings, titles, subtitles, and subheadings should be typed flush with the left-hand margin.

**Titles.**—The title should be *brief* and typed in capital letters. The subtitle can be longer and should be typed in cap and lower case letters. Under the title, or subtitle, if there is one, should appear the name of the author and city in which he lives.

**Subheadings.**—Subheadings should be inserted by the author at appropriate intervals.

**References.**—It is the unfailing practice of the NEW YORK STATE JOURNAL OF MEDICINE to use specific "references" rather than "bibliography." There should appear in the text reference numbers, typed above and to the right of the word to which there is a reference. A list, consecutively numbered, should include the following items:

- a. **Books.**—author's surname followed by initials, title of book, edition, location and name of publisher, year of publication, volume, and page number. Thus, Osler, W. Modern Medicine, ed. 3,

Philadelphia, Lea & Febiger, 1927, vol. 5, p. 57.

- b. **Periodicals.**—author's surname followed by initials, name of periodical, volume, page, month (day if necessary), year of publication. Thus, Leahy, Leon J. New York State J Med 40 347 (Mar 1) 1940.

**NOTE.** The JOURNAL does not include titles of articles.

**Case Reports.**—Instead of abstracts of hospital histories, authors should write these reports in a narrative style with properly completed sentences. All unimportant details should be deleted with such general negative statements as fit the case.

**Tables.**—While tables are very useful on lantern slides in the reading of papers, they fail of this purpose to a large extent in the printed page. For that reason it is urged that they be incorporated in the text.

**Illustrations.**—These should be kept to the minimum necessary to make clear the points to be registered by the author. In some instances they are imperative to proper understanding, in others they are merely picturesque.

Where illustrations are to be used they should accompany manuscripts and each should always be referred to in the text, preferably by number. Drawings or graphs should not be larger than 12 × 16 inches, and must be made with jet black India ink on white paper or tracing cloth. *Do not use typewriter for lettering.* The smallest lettering on 8 × 10 inch copy should be no less than 1/4 inch high. Cross-section paper (white with black lines) may be used, but should not have more than 4 lines per inch. If finer ruled paper is used, the major division lines should be drawn in with black ink, omitting the finer divisions. In the case of finely ruled paper, only blue-lined paper can be accepted. Lettering and all markings must be large enough to be readable after reduction. Mail rolled or flat. Photographs should have clear black and white contrasts and be on glossy white paper.

Whenever possible "crop" photographs, i.e., mark portion that can be excluded when reproduced. Crop marks should be on *margin* of photographs—not on the photographs.

It is important to mark the top of the illustration on the back, also its number as referred to in the text, thus, Fig. 1, 2, and the name and address of the author.

**Legends.** should be typewritten on one sheet of paper and attached to the illustrations.

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# VIRUS DISEASES IN CHILDHOOD

F HOWELL WRIGHT, M D, Chicago

THE principal attribute that distinguishes viruses from other infectious agents is their small size. However, they possess other common properties that assume an equal importance in the study of virus infections. Chief among these are their intimate dependence upon living cells and their ability to incite more or less characteristic changes in the tissues of the host they invade.

The actual magnitude of viruses can be estimated by filtration through collodion membranes with pores of uniform and known size.<sup>1</sup> Table 1 shows the results obtained for some of the agents that enter into this discussion. The common bacterial cocci are roughly five times as large as vaccinia virus, since their diameters range from 500 to 1,200  $\mu$ . The elementary bodies of vaccinia virus can be seen in purified preparations with dark-field illumination, but, in general, viruses are below our present range of visibility. The smaller members of this group, poliomyelitis, for instance, possess diameters that are little greater than those of protein molecules, such as hemoglobin (4  $\mu$ ) and egg albumin (5  $\mu$ ).

Cultivation of these agents in lifeless artificial mediums has not been accomplished. Their processes of growth and reproduction are completely dependent upon the presence of living cells. Furthermore, each virus has its own peculiar requirements that limit the type of cell and animal species in which it will thrive.

Histologic study of virus-infected tissue usually reveals hyperplastic or necrotic changes in the susceptible cells, accompanied by a mononuclear inflammatory reaction. In some diseases these changes are highly specific, especially if they are associated with the formation of inclusion bodies, but often they afford little diagnostic aid.

Nearly all human virus infections may occur in children, but many of them have no practical importance for the pediatrician. Consequently, the scope of this discussion has been narrowed arbitrarily in order to focus upon those diseases enumerated in Table 2. They must be considered individually and briefly in a rather disconnected fashion.

Control of smallpox by prophylactic vaccination is an outstanding achievement in the virus field. The record for New York State during recent years could scarcely be improved, but smallpox still flourishes in some parts of the United States. During 1938 nearly 15,000 cases were reported,<sup>2</sup> and for 1939 the figure exceeded 9,000.<sup>3</sup> It is true that these infections were mild, but they constitute a potential danger which might be eliminated by universal vaccination. A modification of the usual calf lymph vaccine has been prepared by growing vaccinia virus in artificial mediums containing chick-embryo tissue.<sup>4</sup> This vaccine is sterile, may be used intradermally, and produces milder reactions. However, there is some doubt about the adequacy and duration of the immunity it produces,<sup>5</sup> and its originators advise revaccination with a potent calf lymph after an interval of six months or a year.

The common exanthems and mumps are poor subjects for experimental work because they fail to produce regularly identifiable disease in laboratory animals. In the absence of methods of active immunization, the spread of these illnesses must be controlled through the production of temporary passive immunity with convalescent serum or placental globulin.<sup>6</sup>

The virus of herpes simplex has unusual properties which have stimulated many ideas concerning its role as a human pathogen. One current theory holds<sup>7</sup> that during childhood most individuals become carriers of herpes virus, that the virus hibernates permanently somewhere in the body, and that under certain nonspecific stimuli, such as fever therapy,<sup>8</sup> mechanical irritation, or the presence of unrelated disease (pneumonia, meningitis), the virus becomes reactivated and produces vesicles. Aphthous stomatitis is cited as a form of primary herpes invasion because it occurs in young (presumably non-resistant) children, because virus has been recovered from typical lesions,<sup>9</sup> and because the appearance of specific neutralizing antibodies has been observed in the blood of a few convalescents.<sup>7</sup> These antibodies are ordinarily absent from the blood of young children, but can be found in 90 per cent of normal adults. The explanation given for this widespread immune response is that a constant antigenic

Read by invitation at the Annual Meeting of the Medical Society of the State of New York, New York City May 7, 1940.

From the Rockefeller Institute for Medical Research New York City

# House of Delegates

## Reference Committees

THE Speaker, Dr Louis H Bauer, announces the appointment of the reference committees for the meeting, April 28, 1941

### Report of

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and effective method of controlling human infections has not been devised, although some of the proposed techniques have been founded upon sound experimental principles

No group of diseases is more confusing to the pediatrician than the variegated forms of encephalitis which he encounters. Clinical classifications are involved and confused because they cannot be based upon definite etiologic knowledge. A few types of primary encephalitis which can be designated as specific virus infections will be discussed presently, but first the classic form of epidemic encephalitis must be mentioned

Encephalitis lethargica, as described by von Economo in 1917, was an epidemic disease that appeared during the winter months. It presented an acute stage in which somnolence and disturbed vision were characteristic. After a variable interval, a slowly progressive chronic stage followed which was featured by bizarre neurologic and behavior disturbances, among them parkinsonism and oculogyric crises. In recent years, epidemics of this disease have been supplanted by an endemic form, in which the acute stage is frequently absent and symptoms of the chronic stage appear unheralded. Undoubtedly this is the most common type of encephalitis seen today

Ever since its original description, encephalitis lethargica has been considered an infectious disease—probably a virus disease. Indeed, several workers believe that a neurotropic strain of the virus of herpes simplex is responsible. This view has not been generally accepted because much of the experimental evidence accrued in its support is difficult to interpret. Most authorities state that the etiology of this, the classic form of encephalitis, is still unsolved

The type of encephalitis which appeared in St. Louis in 1933 was quickly recognized as a new disease. It occurred as a summer epidemic with a high attack rate. The onset was usually abrupt, with fever, stupor, and meningeal irritation. Muscular rigidity, tremors, and transient paralyses were commonly observed. The spinal fluid contained 50 to 250 lymphocytes. In children the mortality was less than 5 per cent and neurologic residua were mild and infrequent. No chronic or late manifestations have been described.<sup>18</sup>

The search for an infectious agent was soon rewarded by isolation of a filtrable virus from the brain tissue of fatal cases.<sup>17</sup> This agent was highly pathogenic for mice, less so for monkeys. It was not recovered from the

spinal fluid. In convalescent patients humoral antibodies were found which specifically neutralized virus, affording a method of confirming the clinical diagnosis.<sup>18</sup> These antibodies were also found in approximately one-third of the healthy contacts examined.

During the past three summers smaller epidemics of St. Louis encephalitis have probably occurred in the central and western states.<sup>19</sup> In the East only sporadic cases have been recognized. The manner in which this virus is disseminated is not known, and no method of specific prophylaxis or treatment has been developed.

As the name implies, equine encephalomyelitis is primarily a disease of horses. The epidemics that appear annually during July, August, and September are caused by two closely related strains of virus. These confine their activities to separate geographic areas. The eastern strain is found only in cases that occur on this side of the Appalachian Mountains, while the western strain prevails throughout the rest of the country. Transmission of virus from horse to horse or from horse to man is probably accomplished by mosquitoes.<sup>20</sup>

Except for one or two laboratory accidents, human infection with the eastern strain of this virus has been limited to a single epidemic which occurred in the vicinity of Boston in the summer of 1938. Approximately 40 persons were attacked by a fulminating form of encephalitis in which the mortality was 65 per cent, and deaths often occurred within forty-eight hours of the onset. Children were predominantly affected, and of those who survived several were left with severe central nervous system damage.<sup>21</sup>

The etiology of this epidemic was established by the isolation of eastern equine encephalomyelitis virus from brain tissue of fatal cases and by demonstrating specific virus-neutralizing antibodies in the blood of those who survived.<sup>22</sup>

Fragmentary evidence suggests that human infection with the western strain of virus may be milder and more widespread. Specific neutralizing antibodies have been found in the blood of convalescent patients in Minnesota and California.<sup>23</sup>

In horses an active immunity can be produced with a vaccine prepared by formalinizing virus that has been grown in fertile hen's eggs.<sup>24</sup> Preliminary field trials have been encouraging,<sup>25</sup> but the effectiveness of this vaccine must be judged over a period of years since the annual incidence of this disease is

TABLE 1—SIZE OF SOME COMMON VIRUSES\*

	mμ
Vaccinia	125-175
Rabies	100-150
Herpes simplex	100-150
Influenza	80-120
Lymphocytic choriomeningitis	33-60
Equine encephalomyelitis	20-30
St. Louis encephalitis	20-30
Poliomyelitis	8-17

\* Values chiefly from Viruses and Virus Diseases' Lane Medical Lecture of 1939 by Dr. T. M. Rivers

stimulus is supplied by virus lurking in some inapparent form since the primary herpetic infection in childhood. The tissues in which virus hides have not been discovered experimentally, otherwise the evidence for such a carrier state would be fairly complete.

Inclusion blennorrhea is uncommon, but its interesting features deserve mention.<sup>10,11</sup> It appears in newborn infants between the third and twelfth days of life as an acute purulent conjunctivitis, which may be confused with gonorrheal ophthalmia. Diagnosis is made by the demonstration of characteristic inclusion bodies within cells obtained by gently scraping the hypertrophied conjunctival follicles. From this same material a bacteria-free filtrate may be prepared which will produce a similar disease in monkeys, baboons, and man. In infants the acute stage is usually followed by a prolonged chronic phase lasting many months. The administration of sulfanilamide by mouth, however, produces rapid regression of these lesions.<sup>12</sup> The incidence of inclusion blennorrhea in large hospitals is approximately 5 cases per thousand live births. Infection of infants probably takes place during parturition, for both the inclusion bodies and the virus have been demonstrated in cells of the maternal cervix. Since virus has also been found in male urethral discharges, venereal transmission among adults is postulated.

In respiratory tract infections, both clinicians and experimental workers are agreed that viruses play some etiologic role. The common cold has been transmitted to man and certain primates with filtered nasal washings obtained from persons in the acute stages of coryza.<sup>13</sup> Some properties of the virus so isolated have been investigated, but transmission to small animals has not been accomplished and serologic activity has not been recognized. The suggestion has been made that colds are initiated by virus invasion that enhances the pathogenicity of bacterial organisms commonly found in the nasopharynx and allows them to act as secondary invaders.<sup>14</sup>

TABLE 2

Acute Exanthems	Respiratory Diseases
Smallpox and vaccinia	Common cold
Chickenpox	Influenza
Measles	Pentacoosis
German measles	
Miscellaneous	Central Nervous System Diseases
Mumps	Rabies
Herpes simplex	Poliomyelitis
Inclusion blennorrhea	St. Louis encephalitis
	Equine encephalomyelitis
	Lymphocytic choriomeningitis

Epidemic influenza has been more amenable to the experimental approach. Virus strains have been isolated which produce pneumonia in ferrets and subsequently in mice. Furthermore, serologic studies can be made, since during convalescence specific antibodies appear in the blood which neutralize virus and fix complement. These techniques have been utilized in several human epidemics, but the results obtained indicate a complex situation. Although the symptomatology may be similar from one epidemic to another, the ease with which influenza virus can be recovered from throat washings varies widely. Elevation of the serum antibody titer is a more regular finding, but even so it is absent in some patients with characteristic symptoms and present in others who remain well. A recent survey of four localized epidemics led to the conclusion that for a given individual a positive diagnosis of viral influenza could be made only if the clinical history was typical, if the virus was recovered from throat washings, and if a significant rise in serum antibody titer was demonstrated.<sup>14</sup>

Pentacoosis is a respiratory disease of proved virus etiology. In this country its control is effected through supervision of imported tropical birds, which form the chief source of danger for man.

In rabies, too, the main problem of control centers about infection of domestic animals. A number of commercial canine vaccines are available, but their ability to incite an adequate immunity has been questioned.<sup>15</sup> Until preparations of improved potency are available, safety demands that the quarantine and observation of suspected animals be rigidly enforced, irrespective of previous immunization.

Poliomyelitis has been subjected to a concerted experimental attack, but so far many fundamental questions remain unanswered. The origin of virus, the exact route by which it gains entry to the central nervous system, the factors that govern the production of paralysis, and the significance of humoral antibodies are all debatable topics. A safe

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### Discussion

Dr Josephine B. Neal, *New York City*—It is a real privilege to discuss Dr Wright's comprehensive paper. I do not see how Dr Wright covered so much material—and so well—in the time allotted to him. My remarks will be confined to a little elaboration of some of the clinical points which necessarily could not be covered.

In the first place, I should like to speak of epidemic encephalitis—von Economo's epidemic encephalitis. As Dr Wright pointed out, lethargy and disturbances of vision and various cranial palsies are significant when they are present, but they so frequently are not present. Von Economo himself pointed out that the early cases he studied in Vienna were sent in with a great variety of diagnoses—meningitis, poliomyelitis, psychiatric conditions, etc. When the first cases of encephalitis became recognized around here in New York City, for example in the fall of 1918, the earlier cases in children looked very much like an extremely early case of tuberculous meningitis. All through the years we have been studying encephalitis there has been a fairly large percentage of these meningeal cases both in children and in adults.

The variety of symptoms that may occur in acute encephalitis cover an extraordinarily wide range. While there may perhaps be somnolence, there may, in an equal number of cases, be insomnia, or one or the other may predominate at different times in the same patient. There may be palsies of the cranial nerves, or there may be paralysis of the other nerves. Hemiplegia is by no means uncommon. In children, particularly, convulsions are frequent. These convulsions are often severe and prolonged over a long period of time. Then there may be all sorts of disturbances of speech. In children, in particular, there may be a constant chattering or the child may refuse for some days to speak at all. It is hard

to determine whether it is a refusal on the child's part to speak or whether the child is really suffering an aphasia.

The spinal fluid findings vary widely in epidemic encephalitis. In some instances the findings may be entirely normal, and that may be true even in the more severe forms. In others the cell count is increased, the cells usually showing a preponderance of mononuclears or perhaps polymorphonuclears. That is true in cases of equine encephalitis in man. The protein is usually increased, and the increase in protein continues much longer in encephalitis than it does in infantile paralysis. The spinal fluid sugar is normal or high, and the same may be true in infantile paralysis. In other words, there is little about spinal fluid examinations that helps in making definite diagnosis of encephalitis.

Around New York, while we are not able to have tests carried out on all of our cases to determine whether any St. Louis type or human equine encephalitis is present, sufficient sampling has been done, I think, to make it quite definite that the occurrence of St. Louis encephalitis here in the East has had a low incidence. I have not seen any cases of equine encephalitis in New York City.

I wish to emphasize that clinically we cannot differentiate among these different types of encephalitis, so I urge that serologic studies be carried out, as far as one is able to, in order to rule out the St. Louis type and the equine type. Some doctors have insisted that the onset was so severe in the equine encephalitis type and the residual effects so devastating that one should be able to diagnose it clinically. I have seen just the same conditions in encephalitis that I am sure was not of the equine encephalitis group. I wonder whether the acute stage is really absent in these later years in the patients to whom Dr Wright referred—for instance, where the chronic stage seemed to go on without a history of an acute stage—or whether the acute stage was so mild that it escaped diagnosis. I think it is often diagnosed as influenza, and I am sure that the acute phase of epidemic encephalitis may be mild indeed.

Lymphocytic choriomeningitis in our experience in New York City has been an infrequent disease. Since it was first described in 1935, we have sent a great many serums for neutralization tests and during that time only two have come back showing neutralizing properties. I wish to re-emphasize what Dr Wright has said about the necessity of making the diagnosis definite, because I am sure that many cases of the meningeal type of encephalitis or non-paralytic types of poliomyelitis have been reported as lymphocytic choriomeningitis.

When you're stripped of your enthusiasm  
You'll be dressed for the great beyond.  
—Davis Nursing Survey

The x-ray has disclosed 20 cases of tuberculosis among draftees in the Buffalo area who were not aware they had it.

normally variable. The vaccine has also been used to protect laboratory workers who are in intimate contact with the virus.

Lymphocytic choriomeningitis was first recognized as a disease of man in 1935<sup>26</sup>. Although the primary attack of this virus is upon mesodermal cells of the central nervous system, a clinical picture of benign encephalitis results. In France, lymphocytic choriomeningitis has been deliberately transmitted to man for the treatment of neurosyphilis<sup>27</sup>. Subcutaneous injection of virus is followed by a brief incubation period, and then a remittent febrile illness begins. During the first bout of fever, constitutional symptoms that simulate grippe appear, and the virus is present in the blood stream. After fifteen days, approximately one-half the patients develop meningeal symptoms that coincide with the passage of virus into the spinal fluid where it produces increased pressure and a pleocytosis. The meningeal symptoms abate after a few days, and complete recovery follows.

Naturally acquired lymphocytic choriomeningitis probably follows a similar course. Authenticated cases usually have shown an influenza-like prodrome and a pleocytosis exceeding 1,200 lymphocytes per cubic millimeter<sup>28</sup>. A positive diagnosis cannot be made upon clinical findings alone, but three laboratory methods are available for confirmation: isolation of virus from the spinal fluid, demonstration of complement-fixing antibodies early during convalescence<sup>29</sup>, and demonstration of neutralizing antibodies late in convalescence<sup>30</sup>. Complement-fixing antibodies appear about ten to fourteen days after the onset of meningeal symptoms and disappear slowly during the next few weeks. Neutralizing antibodies appear after four to six weeks and may persist for years.

The prevalence of lymphocytic choriomeningitis is difficult to estimate. Only about 25 cases have been completely studied. However, neutralizing antibodies were found in over 10 per cent of a series of 2,500 normal adults<sup>31</sup>. Many of these individuals denied previous central nervous system disease, but they may have had a nonmeningeal form of infection which passed as influenza.

Several types of definite virus encephalitis have been omitted from this discussion because they are not seen in this country except as accidental laboratory infections. The demyelinating forms of encephalitis which occur in rare instances following vaccination against smallpox or rabies have also been

omitted because there is no proof that these complications are due to direct action of the virus upon the central nervous system.

Throughout these remarks no form of specific therapy has been described except for inclusion blennorrhoea. Ordinarily a virus disease cannot be diagnosed until the virus is firmly entrenched within the cells that it preferentially attacks. In this situation it is but slightly affected by therapeutic agents, so that the duration and outcome of the disease depend primarily upon the effectiveness of natural body defenses. Prophylactic measures that attempt to check the virus before it gains such a foothold have yielded better practical results. These include the production of an active immunity, as in smallpox and rabies, protection by passive immunity, as in the exanthems, and control of virus reservoirs in domestic animals, as in rabies, psittacosis, and equine encephalomyelitis. To the pediatrician the advantages of prophylaxis over treatment need no emphasis.

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parative studies made in the charts and summary. Each man in the barren marriage group had the following examination:

# I. History (Pertinent Data)

A. Name, age, occupation, race, religion, number of marriages, years married

B. Previous illnesses.

1. Childhood.

a. Illnesses and congenital abnormalities

2. Adult illnesses

a. Infections: mumps, tuberculosis, gonorrhea and complications, syphilis, nonspecific prostatitis

b. Operations: cryptorchidism, hernia, hydrocele, stricture.

c. Injuries to genitalia

C. Weight.

1. Past, present, fluctuations.

D. Habits

1. Alcohol, tobacco, hours and type of work, vacation, exercise

E. Diet

1. Vitamin A: bacon, butter, fats, cod-liver oil.

2. Vitamin E: cabbage, lettuce, etc.

F. General health.

1. Fatigue.

2. Nervous strain.

G. Occupation.

1. Exposure to x-ray, poisons, etc.

# II. Family History

A. Siblings and number of their offspring

# III. Marital Record.

A. Past marriage (if any)

B. Present marriage.

1. Years married, contraceptive practices, frequency of coitus, dissatisfactions or difficulties, douches or lubricating ointments used, number of pregnancies, miscarriages, abortions, or delayed periods

2. Extramarital pregnancies (?)

3. Previous examination of husband for fertility and previous treatment (if any)

# IV. Physical Examination.

A. General appearance, masculine characteristics, weight, height, hair distribution, and physique

B. General physical examination.

C. Examination of genitalia

1. Penis and urethra

2. Testes: size, position, and consistency

3. Epididymes: size, position, and consistency

4. Vasa: size and consistency

D. Prostate and seminal vesicles

1. Size and consistency

# V. Laboratory Tests.

A. Urinalysis.

B. Smear of prostatic secretions

C. Wassermann.

D. Semen analysis

# MORPHOLOGY OF SPERMATOZOA

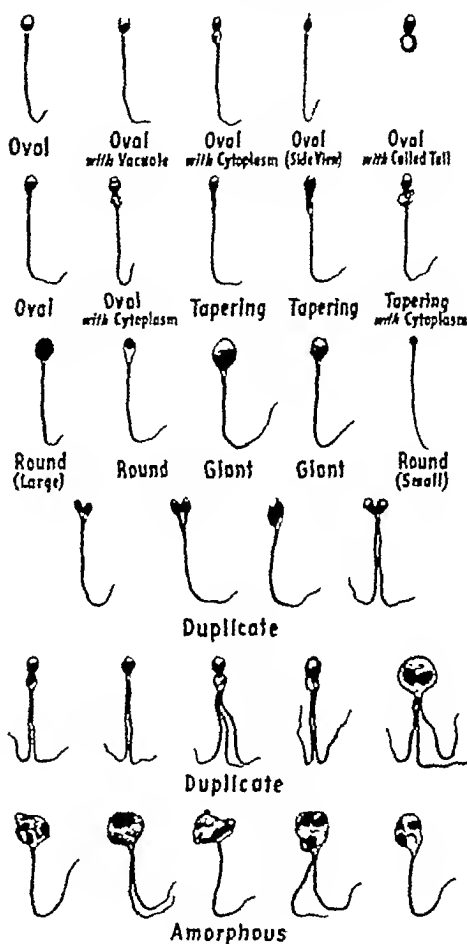


FIG 1

# Method of Semen Analysis

1. **Collection**—Seventy-two hours or more was advised as a period of continence prior to the collection of the specimen. The patient was supplied with a dry, large-mouthed, glass test tube and was instructed to collect the specimen by withdrawal and ejaculation into the tube. No effort was made to regulate the temperature of the specimen while in transport. All specimens were examined within three hours from the time of collection. When received in the laboratory the specimen was allowed to remain at room temperature, and the following tests and notations were made:

1. The volume was measured in cubic centimeters

2. Notations on appearance and viscosity were recorded

# THE MALE FACTOR IN FERTILE AND BARREN MARRIAGE

ROBERT S. HOTCHKISS, M.D., New York City

SEVENTY-TWO years ago the eminent Marion J. Sims addressed this Society on the subject, "The Microscope as an Aid in the Diagnosis and Treatment of Sterility." He had advocated the importance of demonstrating spermatozoa in the semen, and complained that he "was misrepresented, maligned, and positively abused both here and abroad" for his insistence on semen studies. He cited the *Medical Times and Gazette*, which had charged that "this dabbling in the vagina with speculum and syringe was incompatible with decency and self-respect." One-half a century lapsed before his teachings were generally accepted as desirable and ethical, but eventually the obvious truths could not be ignored and the examination of the husband became an essential part of any investigation of barren marriage.

More recently the problem of reproduction has become one of great national concern, for this generation is permitting a serious decline in our national birth rate. Late marriage, contraception, economic stringencies, and curtailment of European immigration are all forces that have depressed our growth. Predictions are made that an actual loss in census will occur in the next few decades. The eugenicists advocate full exploitation of desirable, potential parentage and urge reclamation among the 10 to 15 per cent of marriages that have remained unproductive. A salvage of those who are involuntarily sterile is, therefore, to the best interest of the nation as well as of the individuals.

The vital merits of the endeavor have destroyed the old fastidious antagonisms encountered by our professional forebears, and the approach is now cleared for competent scientific investigations. Remarkable advances have been made in the knowledge of the reproductive faculties of women, but many basic facts remain obscure in regard to men.

Certain theories have now been generally accepted and are regarded as essential principles in the management of marital barrenness. Failure to conceive is more apt to be due to a lowered fertility of one or both partners than to an absolute sterility of either husband or wife. The sum total of the unfavorable fac-

tors may cancel the positive elements of fecundity or may supplement each other in such a way that pregnancy is impossible. Recognition of these defects and a correct interpretation of their *modus operandi* are essential to intelligent treatment.

Man is particularly accessible for complete diagnostic study, for unlike woman his reproductive cells may be secured and examined. The detailed semen analysis has fractionated the semen into elements that are used as criteria for evaluating the fertility. These have been established by laboratory research, animal breeding, and clinical studies of humans. It is now a current practice to measure (1) the volume of the semen, (2) the sperm content, (3) motility, and (4) the morphology of the spermatozoa in the belief that they afford a fairly accurate means of estimating the reproductive worth of the individual.

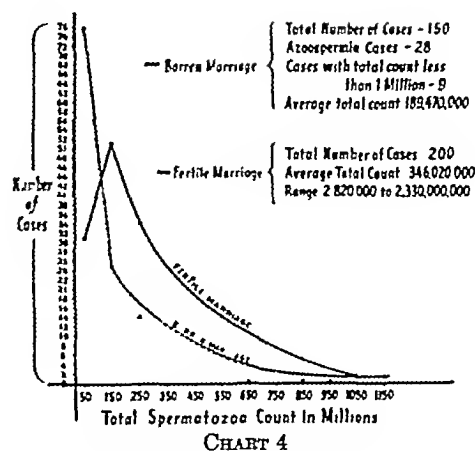
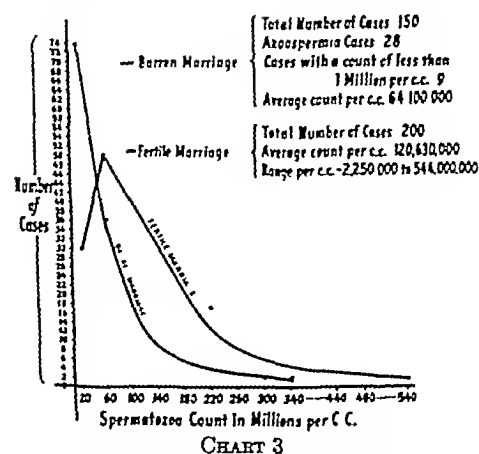
Each of the criteria has been tabulated in a study of 350 men. Two hundred of this number were husbands of pregnant wives, while 150 were associated with barren marriage. The data concerning the infertile group is presented with full appreciation of the thesis that both husband and wife may contribute to the barrenness and that each may have varying degrees of positive fecundity.

## Methods

Consecutive case records were reviewed of men who had been examined for barren marriage by the Department of Surgery (Urology) of the New York Hospital. The Department of Gynecology and Obstetrics had examined the wife of each man, and, if an absolute barrier to conception was discovered in her, the husband was not included in the group. If a multiplicity of defects in the wife warranted the opinion that the cause for the infertility could be assigned to the wife, the record of the husband was withdrawn. One hundred and fifty men were thereupon selected, each of whom had a wife who was either without fault or whose defects could not solely and entirely account for the infertility. The contention is that this group simulates and represents the average couple seeking medical aid for barrenness. The two hundred men of proved fertility were reported in a survey by Brunner, Grenley, and myself in 1938. Reference to this latter group will be confined to the com-

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 9, 1940.

From the Department of Surgery (Urology), New York Hospital, and Cornell University Medical College.



ing drawings will serve as a guide toward the general grouping that was employed (see Fig 1)

The clinical significance of variations in viscosity has not been established. Increased viscosity is often, but not invariably, associated with poor motility and clumping of the cells. Turbidity is usually proportionate to the cell content, and specimens with low spermatozoa counts are less opalescent. The following tables summarize the observations made.

Viscosity (4 omitted)		
Increased	26	17.8%
Normal	84	57.5%
Decreased	36	24.6%

Turbidity (5 omitted)		
Increased	6	4.1%
Normal	95	65.5%
Decreased	44	30.3%

The data obtained from the semen analyses of the 150 men associated with barren marriage has been tabulated and presented in graph form to permit comparison with the group of men whose wives were delivered of normal children. These are self-explanatory (see Charts 1 to 11).

### Discussion

It is apparent that the group of men examined for barren marriage had, in general, poorer specimens than those who were proved to be fertile. The trend is uniform in all categories of the analyses. This would indicate that each of the criteria is important and that not one alone should be used as an indicator. The discrepancy in the values of both groups is not caused solely by the cases of azoospermia, for these were segregated in many instances to avoid such an illusion.

Only 18.6 per cent of the men were without sperm and, therefore, are to be classed as cases of absolute sterility. The remainder, 81.4 per cent, had varying degrees of positive fecundity. In this latter group were some who compared favorably with the fertile men. Likewise, a number of men in the fertile group were poor as judged by these standards. An explanation of this paradox in the former instance is afforded by the acknowledgment that hidden factors in the wife may have prevented conception despite a satisfactory husband. Faulty ovulation, an improper endometrium, or a multiplicity of unfavorable minor lesions may have accounted for the failures. Conversely, the wives of the men who had poor specimens but who conceived probably had ideal reproductive cells and organs conducive to high fertility. This re-emphasizes the importance of interpreting the semen analyses in terms of the findings in the wife.

The higher averages of the fertile group tend to support the theory that the likelihood of pregnancy is increased by seminal specimens of better grades. This is illustrated by comparing the cell count of both groups. The average cell count in the barren group was approximately one-half that of the fertile group. If the cases of azoospermia are omitted, the average count was 75,116,000 per cubic centimeter as compared to 120,630,000 per cubic centimeter of the fertile group.

A comparison of the percentage of cases with low cell counts in the fertile and barren groups is afforded by the following table.

Count per Cc Less than 40,- 000,000	Fertile	Barren	Barren (Less Azoospermia)
	15%	42%	30%

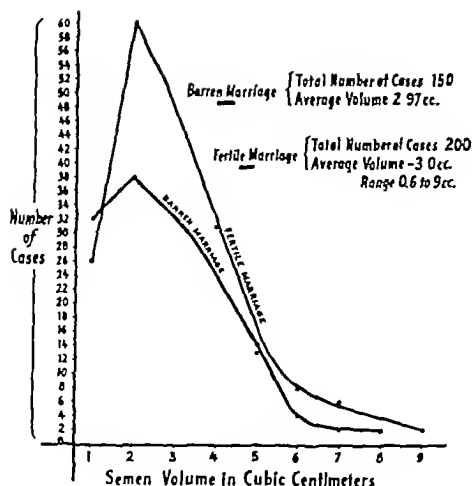


CHART 1

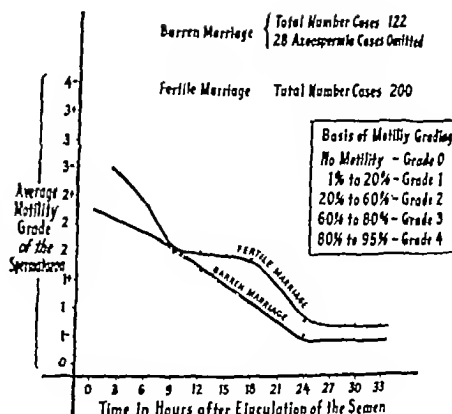


CHART 2

3 The motility was judged and recorded as follows. The readings were taken every three hours during the day until motility had ceased. A disk was placed in the ocular of the microscope which obliterates all but one-quarter of the field. The number of motile cells in the visualized area was counted for ten seconds. The total number of cells was then enumerated, and each number was multiplied by four. The two numbers were placed in fraction form, the numerator being the number of motile cells and the denominator being the total number of cells seen in the microscopic field of a 4-mm objective. The actual percentage of motility is, thereupon, accurately and easily obtained. Grades were assigned to the motility on the following basis of percentage: no motility—Grade 0, 1 to 20 per cent—Grade 1, 20 to 60 per cent—Grade 2, 60 to 80 per cent—Grade 3, and 80 to 95 per cent—Grade 4.

4 The spermatozoa count was expressed in numbers per cubic centimeters. The total number of sperm in the ejaculate was obtained by multiplying the cell count per cubic centimeter by the volume of the semen. Each specimen was thoroughly shaken, and three separate counts were made. If a very few cells were present, no dilution was made. If the cell concentration was obviously reduced, a 1:10 dilution was obtained with a standardized white blood cell pipet, using a fluid consisting of 4 per cent sodium bicarbonate and 1 per cent phenol. A 1:20 dilution was secured if numerous cells were present. The diluent stopped all activity, and the cells were counted in the red blood cell field of an

ordinary blood-counting chamber with a Neubauer ruling. The usual calculations were then carried out according to the dilution used.

5 The morphology of the spermatozoa was studied by classification of the cells into six categories according to the shape of the sperm head. A thin spread of the semen was prepared on a slide, and, while the preparation was still wet, it was passed through the following solutions:

- a. Schaudinn's solution 60 cc.  
Mercury bichloride, 7 per cent—40 cc  
Alcohol, 100 per cent—20 cc  
Time one-half minute
- b. Alcohol, 50 per cent 60 cc.  
Time one-half minute
- c. Wash in water
- d. Eosin, 5 per cent aqueous 60 cc.  
Time one-half minute.
- e. Acid alcohol 60 cc.  
Alcohol, 50 per cent—60 cc  
Conc HCl—3 drops.  
Time two minutes.
- f. Wash in water
- g. Harris' hematoxylin 60 cc  
Standard formula plus  
Conc HCl—3 drops.  
Time two minutes.
- h. Wash in water
- i. Dilute acetic acid 60 cc  
Distilled water—60 cc  
Conc acetic acid—3 drops  
Time one-half minute
- j. Wash, dry, and examine with oil immersion. If desired, mount in balsam for permanent record.

The variety of sizes and shapes of spermatozoa is almost limitless, but the accompany-

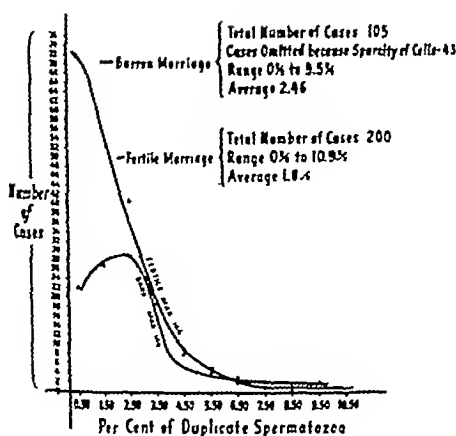


CHART 9

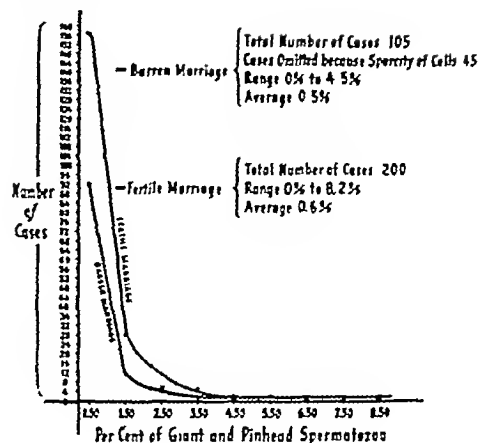


CHART 10

the ejaculates of barren men was 189,470,000 as compared with 346,020,000 in the fertile men

8 The average number of oval (normal) spermatozoa in the barren group was 84.17 per cent while the fertile averaged 89.8 per cent

9 Tapering cells (abnormal) were found in a higher average percentage (10.3 per cent) in the barren than in the fertile group (3.6 per cent)

10 Of the barren cases, 13.3 per cent had tapering cells in excess of 24.2 per cent, which was the highest number found in the fertile cases

11 The duplicate cells were the only other abnormal cells having a higher average incidence in the barren than that in the fertile group

12 Certain cases in the barren group had larger numbers of tapering, amorphous, or round cells (abnormal) than in any single case in the fertile men

13 An assay of fecundity should include a consideration of volume, grade of motility, number of spermatozoa, and percentage of abnormal forms

14 The historic and contemporary significances of sterility are discussed

15 The procedures of the clinical and laboratory investigation of the husband are outlined

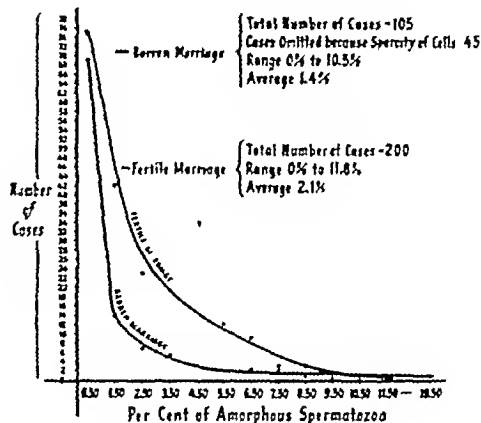


CHART 11

compiled the statistical data. I wish to express sincere appreciation for his invaluable aid. Mr. Ashley Martella used great skill and care in preparing the excellent graphs. His assistance is gratefully acknowledged.

501 Madison Avenue

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### Discussion

Dr. John B. Horner, Albany, New York—I am glad to have the opportunity to discuss the excellent paper of Dr. Hotchkiss. We have indeed progressed and the work presented in this paper is another step.

The profession is now able to point to the potent male partner and say with authority that he, too, may be at fault in a sterile union, even

This study was supported in part by a grant from the National Committee on Maternal Health. Mrs. Elizabeth Hoffman, B.S., M.S., assisted in performing the laboratory work. Mr. William S. Goldfarb, B.S., M.S.,

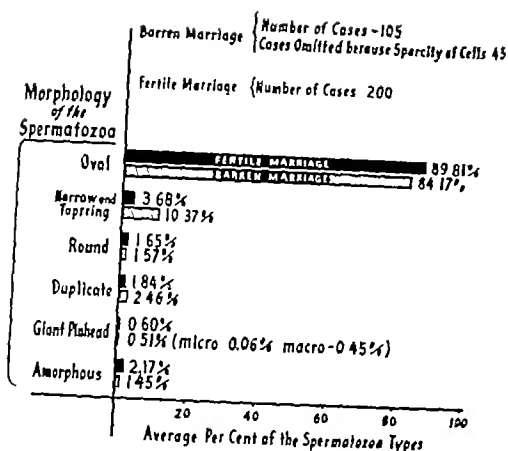


CHART 5

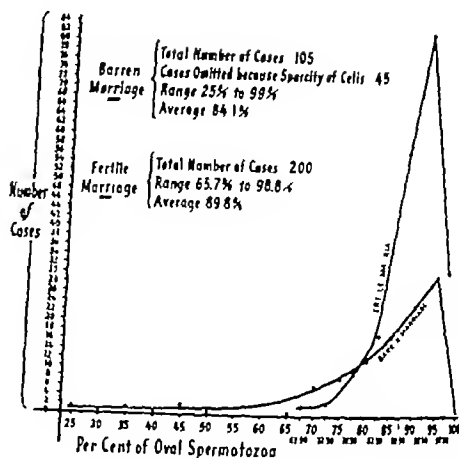


CHART 6

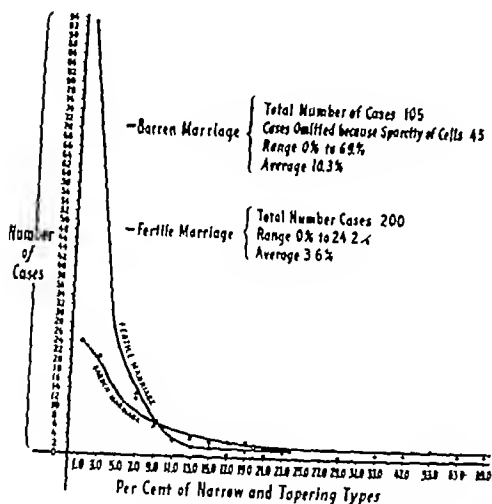


CHART 7

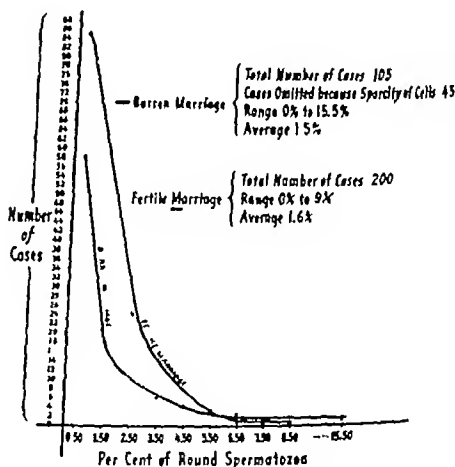


CHART 8

The graphs illustrating the morphology are particularly significant for their distribution and range. The oval spermatozoa are regarded as normal. The greatest variation in incidence of the abnormal cells was in the narrow and tapering forms (Chart 7). In the fertile men the highest number of these encountered was 24.2 per cent. In the barren group as many as 69 per cent were found in 1 case. Fourteen cases (13.3 per cent) had more than 24.2 per cent, which was the upper limit found in the fertile men. The only other abnormal cell found to have an average, higher incidence in the barren group was the duplicate cell.

## Summary and Conclusion

1 Detailed analyses of the semen of 150

men examined for barren marriage are herein reported.

2 The analyses are compared with those formerly obtained in 200 fertile men whose wives were in the first half of gestation.

3 The volume of ejaculate averaged 3 cc in the fertile group and 2.9 cc in the barren group.

4 The average grade of motility was poorer in the barren than the fertile group.

5 The spermatozoa count averaged 64,100,000 per cubic centimeter in the barren group as compared to 120,630,000 per cubic centimeter in the fertile group.

6 Omitting cases of azoospermia the average cell count in the barren group was 75,116,000 per cubic centimeter.

7 The average number of spermatozoa in

## REGIONAL ENTERITIS

### Report of Two Cases

IRWIN E. SIRIS, M.D., New York City

THE increasing clinical recognition of regional enteritis now established as a distinct clinicopathologic entity can be attributed to the painstaking coordinated effort of the clinician, the roentgenologist, and the pathologist. Crohn, Ginzburg, and Oppenheimer's<sup>1</sup> exhaustive investigation of 14 patients in 1932 stimulated renewed interest in inflammatory segmental regional enteritis. They characterized the disease then as a nonspecific, subacute, or chronic necrotizing and cicatrizing inflammation of the ileum occurring predominantly in young adults. Their concept revived interest in the nonmalignant, inflammatory intestinal tumors of obscure etiology vaguely termed "benign granuloma." Since the publication of their article other observers and Crohn himself have reported similar nonspecific inflammatory processes in other parts of the small intestine and in the colon, and the combination of ileitis and colitis has been described. The all-inclusive clinicopathologic studies of Crohn and his associates has been corroborated in part or in its entirety by many contributions to the subject embracing a large number of case reports, which serve to clarify some phase of the disease.

The first patient we are reporting was operated upon in 1934. The diagnosis was a chronic, hyperplastic ileocolitis apparently of nonspecific origin, although tuberculosis could not be ruled out. The consideration of a tubercular origin could not be established and was therefore questionable. The satisfactory result following surgical excision prompted this case report, as it seems unlikely that the disease could have been effectively treated by nonoperative methods.

M. A., a white single woman, aged 22, a stenographer, was seen on July 5, 1934, and complained of cramplike pain in the right lower quadrant, diarrhea, weakness, and progressive loss of weight. For a year she had been complaining of a pressing pain in the epigastrium which occurred shortly after eating and which invariably was followed by a cramplike pain in the abdomen and a loose, offensive bowel movement. The stools did not contain blood or mucus. These symptoms would abate for periods

of a few days but recurred with increasing intensity, especially so during the month before admission. There was progressive loss of weight, restlessness, and considerable apprehension, particularly at night. During the night before admission she had a chill followed by a temperature of 103 F. During her childhood she had measles, scarlet fever, and whooping cough. There was also a history of a mastoid operation during infancy. Her three brothers and her sister were well.

On admission to the Beth Moses Hospital, the patient appeared acutely ill, pale, thin, and undernourished. She weighed approximately 90 pounds. Her temperature was 103 F., pulse rate, 120, respiratory rate, 20. The pupils were equal and reacted to light. The mucous membranes of her mouth were pale. There was a partial paralysis of the left side of her face. The chest was of the asthenic type, there were no adventitious lung or heart sounds. The abdomen was soft, the liver extended just below the costal margin. There was some fullness in the right lower quadrant which was vaguely tender and which suggested the presence of a mass which, however, was not constant.

**Laboratory Data.**—The urine examination on admission showed a trace of albumin. The blood contained 6,000,000 red blood cells per cubic millimeter. The hemoglobin content was 70 per cent with a color index of 0.6. There were 26,000 white blood cells, of which 85 per cent were polymorphonuclear leukocytes and 15 per cent were mononuclear cells. The Wassermann and Rosenthal tests were reported negative. Further blood examinations disclosed sugar, 90, urea nitrogen, 17, and a total cholesterol of 145 mg. per hundred cubic centimeters of serum with 20 per cent cholesterol ester. Repeated stool examinations were negative for parasites and acid-fast bacilli on smears and cultures. Gastric analysis by the fractional method disclosed the presence of blood in each specimen with some bile and an average total acidity between 6 and 8 with an absence of free hydrochloric acid.

Proctoscopic and sigmoidoscopic examinations revealed the presence of a glistening mucous membrane that was pale but presented no evidence of ulceration.

**Radiographic Examination.**—The chest films showed diffuse bilateral accentuation of the pulmonary markings and interlobar septal thickening between the middle and lower lobes of the right lung. The apices and general peripheries were clear of any infiltration or consolidation.

Read before the Brooklyn Surgical Society, November 7, 1940.

though a large number of motile spermatozoa are found in a sperm specimen or in the vagina

Painstaking work and records of the type presented by Dr Hotchkiss have given us a standard against which we can judge a specimen. We can all easily and quickly take a history and examine the patient if we bear in mind the causes—local, general, and endocrine—of lowered fertility. We can just as easily do a sperm count and stained smear.

In the matter of obtaining the specimen, I think the use of condom during intercourse gives the most satisfactory sample, but it should be one that has been washed before use. As to the time of examination, it would seem the earlier the better, but then, of course, you would have to remember that the motility chart would depend upon when the first examination was made.

A good many tests—chemical and otherwise—are used, such as, checking the pH, the buffer capacity, the glucose content, etc., but they have either proved to be of no value or check so closely with the cell count and morphologic assay that they are not valuable aids.

Lowered cell count and motility with an in-

crease in abnormal forms are not a proof of sterility but rather a proof of some fault of the genital tract—toxic or otherwise—which may be sufficient to render the sperm infertile.

And so we come to the inevitable conclusion that, in the specimens that fall short in one way or another, the normal appearing motile spermatozoon, of which there may be millions, are deficient in something necessary for fertilization. In this group are patients whose wives become pregnant but abort early, and this, too, may be the fault of the man rather than the woman.

In my experience by far the largest percentage of deficient sperm specimens have come from the tired, overworked, nervous individual and were, I believe, due to toxemia. We place the most reliance on the morphologic assay and recheck any counts several times when the morphology is normal.

As to treatment, the patient should be treated for the cause of the disability, whether it be local or general, and not by indiscriminate use of endocrine products unless there is a discernible endocrine deficiency. I wish to congratulate Dr Hotchkiss for his contribution.

## NIGHT OVER EUROPE

Perhaps the most frightening aspect of modern war is the intellectual blackout it creates, observes the annual report of the Rockefeller Foundation. When the war broke out in September, 1939, the Foundation had 110 running appropriations in Europe, distributed in twenty-two countries, involving over \$4,000,000. Some of this extensive medical and health work has been able to go on, but at the time of the report, notes the *Medical Record*, the University of Warsaw has ceased to exist. According to reliable reports, the entire Polish faculty of the University of Cracow is in a concentration camp. The Polish members of the faculty of the University of Vilna have been dismissed. The Moors, entrenched in the ruined University of Madrid, have used the books from the University library as defenses in their rifle pits. The University of Prague has been shut by the German Government. The University of Strasbourg has been torn from its site and planted in Clermont-Ferrand. For reasons of economy and because their students are in military service, more than half the universities of Germany are closed. What will be the next report of the Rockefeller Foundation which will comprise the events of the fateful summer of 1940?

## THE DOCTOR IS SURE OF A LIVING

Medicine probably is the only field today in which a well-educated graduate is sure of making a living and also of having security if he carries disability, life, and old age insurance, says Dr Wilburt C. Davison, of Durham, North Carolina, in the *JAMA*. Except for crowding in the larger cities, there is no unemployment problem for American medical graduates. Although he will not make a fortune, as large medical incomes may be a thing of the past, the average physician's income at present probably is at its highest level.

According to national figures, 30 per cent of the three and one-half billion annual total cost of medical care is for physicians, or \$3,800 net per physician. However, this net figure is based on many physicians who are not in practice, and the correct average net income probably is higher. "Average incomes" may be misleading.

A few large incomes do not help the physician who is not earning enough to enable him to maintain the standards of good practice. However, physicians with extremely high and low incomes are in the minority, no physician's income can be compared with those of the leading lawyers, but physicians have not found it necessary to seek other fields to eke out an existence, as is the case with some lawyers.

## ONLY A BLIND

A patient in a hospital awoke after an operation and found the blinds drawn in his room.

"Why are those blinds down, doctor?" he asked.

"Well," said the physician, "there was a fire in the alley, and I didn't want you to wake up and think the operation had been a failure."

—*Davis Nursing Survey*

## AMPLE SLEEPING QUARTERS

The doctor met Mrs. Brown on the street. "How is your husband now?" he asked. "Did you give him the sleeping powder?"

"Yes," she replied. "You told me to give him the amount I could get on a quarter, but as I didn't have any, I used twenty-five pennies, and he's been asleep now for four days."

—*Rocky Mountain Medical Journal*



FIG 2

FIG 2 M A, erosion of the mucosa with cellular infiltration in submucosa and muscularis, granulation tissue in the serosa

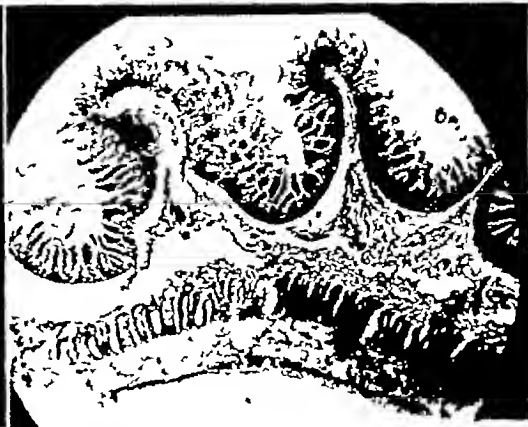


FIG 3

FIG 3 M A, involvement of muscularis and serosa of proximal grossly involved ileum

the ileum there is an area with marked thickening and firmness. This area measures 2 cm in diameter. The dense connective tissue band passes from the inferior portion of the transverse colon to the ileocecal region in the area of the colonic adhesions to the ileocecal mass. The villi of the ileum are prominent and swollen. There are numerous longitudinal areas of ulceration with tabs of exudate adherent to the ulcerated surfaces. The nearer one goes to the ileocecal valve, the thicker is the wall of the ileum, until finally it becomes incorporated in a mass and then measures 3 to 4 cm. The ileocecal valve barely admits the tip of the small finger. The muscularis in this region is markedly increased in width and presents numerous grayish bands running in irregular fashion throughout the muscular coat. At times the muscular coat measures slightly more than 1 centimeter in thickness. The proximal half of the appendix is included in the same mass. The distal half is adherent to the inferior surfaces of the ileum. The mucosa of the proximal half is also polypoid in character, whereas the mucosa of the distal half presents a normal appearance. The thickness of the appendix consists mainly of thickened serosa. The mass presents a firm consistency and on cross section reveals a pearly gray mass of firm tissue with areas of yellowish strands running in irregular fashion throughout the mass. Small tubercles, from pin-point- to pinhead-sized areas are also present. A few enlarged lymph nodes are present. These merely present a succulent appearance with no characteristic alteration of structure.

**Microscopic.** The entire wall is thickened. Granulation and dense connective tissue with mononuclear cells and leukocytes are present in all coats, especially in the serosa. A number of granulomas with Langhan's and foreign body, giant cells are present in all coats. A few of the granulomas show necrosis of the central areas, although caseation necrosis is not present. Acid-fast bacilli are not found in any of the sections (Figs. 2, 3, and 4).

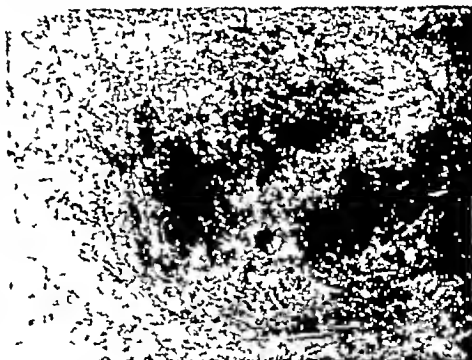


FIG 4. M A, foreign body, giant-cell reaction in fistulous tract

**Diagnosis** Chronic hyperplastic ileocolitis is apparently of nonspecific origin, although tuberculosis cannot be ruled out.

**Subsequent Course**—The patient gradually gained in weight with improvement in her appetite and general well-being. However, there was a persistent discharge from the sinus in the lower angle of the incision. One year later on September 11, 1935, radiographic study of the abdomen, following the ingestion of lipiodol into the sinus, revealed a communication into the abdominal cavity—apparently, however, not communicating with a hollow viscera. Within six months the sinus closed and has remained healed. On October 16, 1940, during the administration of a barium enema, the contrast medium was found to flow readily into the colon and intermittently empty into the ileum through the new stoma. There was no evidence of cicatrization. The proximal transverse colon was found to have veered sharply to the right



Fig 1 M A, July 23, 1934. Irregular filling defect of the cecum. The terminal ileum is stringy

On July 12, following the administration of a barium enema, the colon, with the exception of the caput cecum, appeared normal in outline. The cecum was constricted at its lowest border in addition to a small segment of the ileocecal junction.

On July 23 radiographic examination after the ingestion of a bariumized meal disclosed an irregularly constricted filling defect in the lower aspect of the cecum (Fig 1). The colon was visualized throughout with the exception of the cecum and parts of the proximal ascending colon. These findings suggested some benign inflammatory process involving the terminal ileum and caput, possibly secondary to an extrinsic inflammatory process.

In view of the increasing frequency and intensity of the intermittent abdominal cramps, epigastric distress, diarrhea, loss of weight, palpable mass, and the persistent defect in the cecum, with recurring daily temperature to 102 F, surgical intervention was considered justifiable. Preparation for the operation consisted of general supportive treatment and a transfusion of 500 cc. of blood given on the day preceding the operation.

**Operation.**—On July 27, the operation was performed under a general anesthetic. A long right rectus incision was made to permit adequate

exposure of the mass that was found to involve the cecum and ascending colon. The peritoneum presented a mottled hemorrhagic appearance, and over the ileum there were shaggy fibrinous tabs, markedly vascular. The tumor was approximately 4 by 3 inches in diameter and firmly adherent to the anterior abdominal wall. About 8 inches of the terminal ileum was plum colored, leathery in consistency, curled upon itself, hyperplastic, and adherent to the proximal half of the transverse colon which in turn was thickened and firmly adherent to the terminal ileum along its inferior mesenteric border. The terminal ileum, ascending colon, and proximal two-thirds of the transverse colon were resected. The divided ends were closed with three layers of sutures. The terminal ileum and the distal third of the transverse colon were approximated by a side-to-side anastomosis with an inner layer of chromic and an outer layer of fine Pagenstecher. The defect in the posterior peritoneum was closed. A Penrose drain was inserted about an inch beyond the anterior abdominal wall, and the abdominal incision was closed in layers. A transfusion of 500 cc of blood and 5 per cent glucose and saline were administered during the operation.

**Postoperative Course.**—The first four days were stormy, the temperature was elevated to 104 F, and the pulse was exceedingly rapid, at times as much as 160 beats per minute. After the fifth day the temperature and pulse rate gradually approached and remained within normal limits. Intermittent Wangenstein siphonage was effectively established. On the fourth day she had three loose bowel movements in twelve hours. The wound showed evidence of infection on the third day. The discharge gradually increased in amount until the eleventh day and thereafter diminished but persisted in small amounts even up to the time of her discharge from the hospital. The patient was discharged on September 14, two months after admission, weighing 80 pounds, 10 pounds less than when she was admitted. During her convalescence she was on a high-vitamin diet with iron and malt. Her stools, occasionally two a day, were well formed and normal in color, without any evidence of blood or mucus.

The pathologic findings as reported by Dr A. Kantrowitz, director of laboratories, was as follows:

**Gross.** Specimen consists of 30 cm. of terminal ileum and 28 cm. of ascending and transverse colon. In the region of the ileocecal valve there is a mass 6 cm. in diameter. This is present in the ileocecal angle and includes both the ileum and proximal portion of ascending colon. The transverse colon is adherent to this mass. The peritoneum over the mass is markedly injected in areas and presents a mottled hemorrhagic appearance. The peritoneum over the distal portion of the ileum is in large numbers of shaggy fibrinous tabs with well-marked vascularization. Twelve centimeters from the resected portion of



FIG 7

FIG 7 M. K., August 4, 1938 Hourly, barium, small intestinal studies show in the last 8 inches of ileum a persistent stringiness with fraying of the small intestine as it is encroached upon by an extrinsic mass

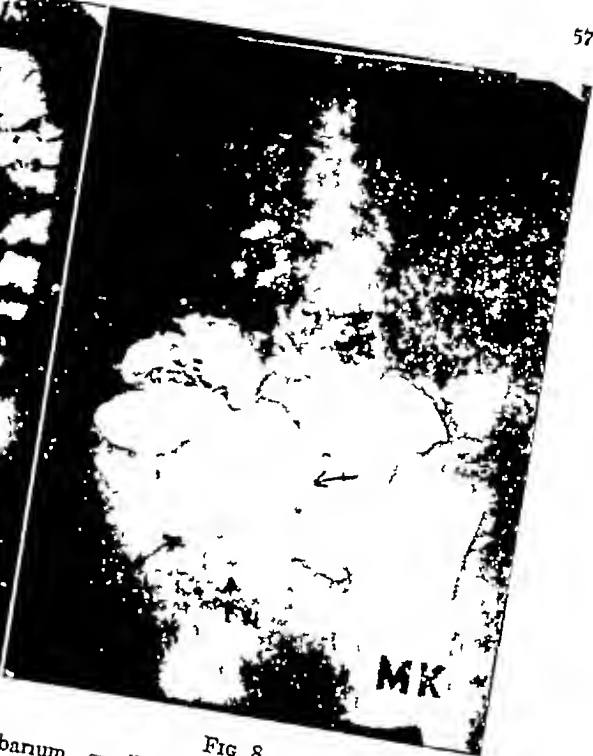


FIG 8

FIG 8 M. K., November 5, 1938, eighty-four days after the ileotransverse colostomy, bariumized, small intestinal study reveals a faint, ill-defined and stringy, moth-eaten appearance of lowermost coils of ileum

The right lower quadrant is partly devoid of ileum.

Mesially to the iliac crest there was a palpable mass approximately the size of a large apple, relatively soft in consistency, and tender on deep pressure. Slight rebound tenderness was readily elicited over this area. On rectal examination a large, boggy soft mass was palpable, extending from the right side to well beyond the midline. No blood or mucus was found on the examining finger. On proctoscopic and sigmoidoscopic examination the mucous membrane was found glistening, but no ulceration, blood, or mucus was observed.

**Laboratory Data**—The urine examination was negative. The blood contained 4,100,000 red cells per cubic millimeter. The hemoglobin content was 11 Gm. There were 16,200 white cells, of which 72 per cent were polymorphonuclear leukocytes and 28 per cent were mononuclear cells. The Wassermann and Rosenthal tests gave negative results. The examinations of the stools failed to reveal ameba or acid-fast bacilli.

The barium studies were reported by Dr. Louis A. Held. He demonstrated that the bariumized clysmas flowed easily into the colon and presented a markedly irregular, moth-eaten, persistent filling defect in the mesial aspect of

the cecum and proximal ascending colon (Fig. 6). There were moderately gas-distended, terminal coils of ileum which appeared persistently to approximate the mesial border of the ascending colon. Five days later hourly studies of the small intestine following the ingestion of a bariumized meal revealed that approximately the last 8 inches of ileum disclosed a persistent stringiness together with a distinct fraying of the external border of an additional 4 inches of small intestine immediately above as if encroached upon by some extrinsic mass (Fig. 7). The barium enema and fractional small intestinal studies indicated some form of inflammatory process involving the lower 8 to 10 inches of the terminal ileum and the mesial border of the cecum. While the nature of the lesion was not conclusively established, the presence of a regional enteritis or some benign inflammatory process (pericecal abscess) affecting the hollow viscera in the right lower quadrant was strongly suggestive.

During the thirteen days in which the patient was observed, the clinical course varied from periods of regression to those of exacerbation of symptoms. At times the abdominal mass seemed less tender and the rectal mass smaller



FIG 5

FIG 5 M A, October 16, 1940, six years after resection, contrast mediums flowed readily into the colon and intermittently emptied into the ileum through the new stoma. The transverse colon veered sharply to the right side



FIG 6

FIG 6 M K, July 30, 1938. Markedly irregular, moth-eaten, persistent filling defect in the mesial aspect of the cecum and ascending colon. Gas-distended, terminal ileum approximating the mesial border of the ascending colon

side of the abdomen (Fig 5). About 75 per cent of the contents of the colon was readily evacuated. Within twenty-four hours no trace of the barium was visible. The patient weighed 124 pounds, she has continued uninterruptedly at her work for the past four years. She has had two and, occasionally, three soft bowel movements daily. This she attributes to her inability to obtain proper food while at work. She has had no abdominal cramps, nor has she observed any blood or muous. She has a very good appetite and believes that she is in excellent health.

The second case presented a walled-off abscess following a perforation into the peritoneal cavity, this complicated the diagnosis and the technical management. This case is also illustrative of the extent to which the peritoneal cavity was immunized in the presence of the discharging sinus from the mesenteric abscess. A comparatively uneventful convalescence followed resection of the diseased ileum and ascending colon.

M K., a white married man, aged 32, a mechanic, was admitted to the Beth Moses Hospital on July 30, 1938. His chief complaint

was intermittent abdominal cramps. He has been married eleven years and his wife and two children have been in good health. For the past three years he had had frequent bowel movements with occasional episodes of severe abdominal "cramps," which could, at times, be controlled with tincture of opium. In another institution he had had frequent proctoscopic examinations, and there received a course of autogenous vaccine twice yearly. On the day before admission the abdominal cramps were intense and gripping in character such as he had never before experienced. He was nauseated and vomited, but there was no bowel movement. Tincture of opium did not relieve his pain, which seemed to radiate across his abdomen to the precordium and then migrate down the midline to the suprapubic region.

**Examination.** The patient was pale, thin, acutely ill, and he seemed in distress. His temperature was 102 F, and his pulse was 88. His ribs were very prominent, and he had deep supraclavicular fossae. The lungs were clear, and the heart sounds were apparently normal. The abdomen was moderately distended with some appreciable resistance on the right side as compared with the left, there was no rigidity

with 75 Mg. of cholesterol ester The urine was essentially negative

Radiographic fractional studies after the ingestion of a thin barium meal revealed that although the stomach emptied its contents in four hours the progress of the barium in the small intestine was sluggish. The ileal coils showed slight overdistention and were situated rather high in the abdomen. The right lower quadrant seemed devoid of ileum throughout the examination with the exception of intervals at the fourth, sixth, and tenth hours, at which time a faint ill-defined and stringy moth-eaten appearance of the lowermost coils of the ileum was evident (Fig 8). A section of ileum approximately 10 inches from the terminal end appeared persistently approximated to the transverse colon some distance beyond the hepatic flexure. The barium contents flowed into the colon and back into the ascending colon as well as into the distal colon. The cecum was not visualized. The ileocolostomy stoma was noted. From this observation it appeared that the last 12 or 18 inches of ileum were involved in the inflammatory infiltration, which seemed to be within or around a soft tissue density occupying the right lower quadrant. The studies with the bariumized clymas were unsatisfactory, as the patient complained of great discomfort when the barium would approach to the splenic flexure. From that point there was no satisfactory definition of the colon except that the hepatic flexure and some small intestine occupied a crowded position in the right side of the upper part of the abdomen and showed appreciable pocketing. The right lower quadrant was devoid of any intestinal presence at all.

During the seven days preceding the second operation his temperature, pulse, and respiration were normal, there were only occasional complaints of abdominal cramps and loose stools. On November 3, a transfusion of 500 cc of blood was administered. The presence of the tender ectal mass and a persistent discharge from the sinuses presented definite evidence of an infection which, it was realized, might precipitate a generalized peritonitis. However, it was felt that the condition offered a poor prognosis unless the disease was eradicated. Confidence in the immunization of the peritoneal cavity in combating the infection over a period of months, particularly after the trauma of the first operation, warranted taking further steps to remove the diseased segment of intestine.

**Operation.**—On November 8, 1938, twelve weeks after the first operation, under spinal anesthetic with 200 mg. of neocaine, the two sinuses and the old scar were excised en masse down to the peritoneal cavity. There was no evidence of free pus or other fluid in the peritoneal cavity. The cecum, ascending colon, and approximately 10 inches of terminal ileum were firmly matted together, the latter being directed downward and then upward including a diffusely indurated mesentery of the small intestine.

The terminal ileum was indurated, leathery, and doughy in consistency and purplish blue in color and was covered with dull grayish flakes. The ascending colon was red and edematous but did not have the induration, consistency, or color of the ileum. The conglomerate mass was adherent to the wall of the right side of the true pelvis, the bladder, and to the lower sigmoid just above the beginning of its peritoneal reflection.

The ascending colon was separated from the anterior and lateral parietal peritoneum and reflected mesially. The hepatic flexure was separated from the duodenum to which it was firmly adherent. The right ureter was exposed. The transverse colon, 2 inches proximal to the ileocolostomy, was divided between clamps, as was the terminal ileum, 2 inches distal to the stoma. The mesentery was divided between clamps. The divided ends of the intestine were closed with four layers of sutures. The defect in the posterior parietal peritoneum was closed, partly with omentum. A small Penrose drain was inserted 1 inch within the peritoneal cavity. The abdominal wound was closed in layers with interrupted sutures. During the operation the patient received a transfusion of 500 cc of blood.

**Postoperative Course.**—The general condition of the patient during and after the operation was satisfactory. For the first five days his temperature did not reach 100 F, and his pulse remained below 100 beats per minute. There was no nausea, vomiting, or distention. He received parenteral fluids for five days and no fluids by mouth. On the sixth day his temperature was 100.2 F, pulse, 108, respiration, 24, a slight foul purulent discharge was evacuated from the lower angle of the wound. On this day he had a well-formed, dark brown stool. The discharge from the wound lessened, in fact it was never profuse and did not affect the healing of a firm wound.

The pathologic findings as reported by Dr. A. Kantrowitz were as follows

**Gross Specimen** consists of 90 cm. of terminal small intestine and 25 cm. of cecum and ascending colon. The ileum is somewhat dilated. The serosal surface is considerably roughened because of numerous connective tissue tabs. This is an especially prominent feature the nearer one approaches the cecum. The terminal loop of ileum presents an L-shaped appearance due to marked connective tissue adhesions between both arms of the loop, rendering the separation of both arms extremely difficult and almost impossible without perforating the individual loops. The cecum and ascending colon show adhesions to the contiguous portion of cecum. The mesenteric sinuses are markedly thickened and present a firm consistency with a pearly gray appearance. The terminal loop is also adherent to the wall of the cecum and ascending colon, measuring 4 cm. in length and 2 cm. in thickness. A sinus tract is present in this area, and a probe can be passed

The temperature fluctuated daily between 99 and 101 F, on the sixth day the white cells were 10,800 with 71 per cent polymorphonuclear leukocytes. The patient, however, continued to complain of intermittent, abdominal, griping cramps, waning appetite, and frequent loose stools. His general condition indicated that he was not improving. The impression based on the radiographic and clinical observations was that we were confronted with an inflammatory segmental enteritis with probable perforation into the mesentery which was associated with a walled-off abscess. It was realized that the presence of an abscess would preclude extirpation of the diseased segments of intestine. The alternative was to divert the fecal stream and place the inflammatory process in the intestine as near inertia as possible by performing a transverse ileocolostomy. It was felt the intestinal anastomosis would entail certain risk in the presence of infection, but in view of underlying pathology and prolonged autoimmunization it appeared justifiable to subject the patient to the operation.

**Operation**—On August 12, 1938, the operation was performed under spinal anesthetic using 200 mg of neocaine. The abdomen was opened through a long right rectus incision. A large mass was found adherent to the pelvis and to the anterior and lateral abdominal wall. It consisted of several inches of the terminal ileum firmly adherent to the mesial surface of the cecum and ascending colon. The inflammatory process seemed to be confined essentially to approximately 8 to 10 inches of the terminal ileum, which was thick, leathery in consistency, and purplish blue in color. Its mesentery was about 2 inches thick, partly necrotic, encasing about 3 ounces of thick, yellow, odorless pus that had perforated from the inner side of the ascending colon. There were numerous enlarged glands in much of the rest of the mesentery. The cecum and ascending colon were moderately thickened but apparently not involved or involved to any degree in consistency and color as the terminal ileum. The appendix was 3 inches long, was situated on the lateral wall of the cecum, and was not adherent and not involved to any extent in the diseased process. About 10 inches proximal to the diseased ileum, the ileum was sutured to the middle of the transverse colon. The pus in the abscess cavity was evacuated, and a Penrose drain was inserted to the base of the abscess. The abdominal wall was closed in layers with interrupted sutures. During the operation the patient received 1,000 cc of 5 per cent glucose in saline followed by 500 cc of blood.

**Postoperative Course**—The patient's immediate postoperative reaction was satisfactory. Intermittent Wangenstein siphonage was effectively established. Parenteral fluids were administered for several days. On the first postoperative day his temperature was 101.8 F, pulse rate, 116, respiration rate, 22, and his

abdomen was soft. On the third day he received a transfusion of 350 cc of blood. On the fifth day his temperature rose to 103.2 F, and there was evidence of profuse drainage from the incision. Three days later the temperature was normal, and the discharge from the wound was beginning to lessen in amount.

The smear from the pus evacuated from the abscess at the time of operation disclosed gram-negative bacilli and gram-positive cocci in chains. The culture was reported as demonstrating bacilli coli and enterococcus.

On September 3, twenty-one days after the operation, the discharge from the wound was a light yellow-brown, suggestive of feces. Rectal examination revealed a mass of about the same proportion as before the operation, hard, moderately tender and bulging into the rectum. During the ensuing three weeks his temperature would occasionally rise to 102 F. The stools were soft, yellow in color, and averaged three evacuations daily. At times there was almost continuous diarrhea, which was refractory to treatment. At no time was there gross evidence of blood or mucus. He seemed apprehensive because of loss of weight and lack of appetite. On September 22, his red blood cells were 3,700,000, his hemoglobin, 11 Gm, white blood cells, 8,400, with 80 per cent polymorphonuclear leukocytes.

On September 30, forty-nine days after the operation, he was discharged to a convalescent home in an effort to improve his general condition before subjecting him to the operation for removal of the diseased segment of intestine. For several days before his discharge the temperature had been relatively normal, the discharge from the sinus was scant, the rectal mass was somewhat smaller, the stools were less frequent, and his general condition was much improved.

**Readmission Note**—On November 1, 1938 one month after his discharge from the hospital he was readmitted because of frequent recurring attacks of violent colicky pains a few hours after his evening meals. These pains were always associated with distressing episodes of belching. For two to three weeks he had had one or two fairly soft formed stools daily. There were no episodes of nausea or vomiting. He had had no urinary symptoms. He weighed on readmission 102 pounds, a gain of 20 pounds since his discharge. There are two discharging sinuses in the lower part of the operative incision from which there had been a slight but persistent purulent discharge. The tumor mass was readily palpable in the lower abdomen and on rectal examination. Pressure on the rectal mass would express some pus from the sinus.

The blood on his readmission contained 4,800,000 red cells per cubic millimeter, the hemoglobin was 13 Gm., the white cells were 14,720 with 82 per cent polymorphonuclear leukocytes. The sugar was 75, the urea nitrogen, 11, the cholesterol, 155 per 100 cc of serum.

## Conclusions

In both patients the salient features of regional enteritis were encountered in which the chief presenting clinical manifestations were cramplike intermittent abdominal pain associated with diarrhea, variable fever, loss of weight, and a palpable mass in the right lower quadrant. In both, symptoms of partial obstruction became superimposed on a partially stenosed intestine.

The first case represented a subacute hyperplastic ileocolitis with involvement of both the terminal ileum, cecum, and ascending colon, with uneventful recovery following a one-stage resection. The presence of giant cells and small tubercles in the granulomatous tissue was suggestive of tuberculosis, but no acid-fast bacilli or caseation necrosis was present. The second case illustrated a perforated regional ileitis with abscess formation treated by a transverse ileocolostomy and drainage. Twelve weeks later the diseased bowel was successfully resected. The inflammatory process was an exudative, hyperplastic, stenosing lesion of the terminal ileum which ended abruptly at the ileocecal valve but involved the mesentery and had perforated into a walled-off abscess.

## Reference

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FIG 11 M. K., October 15, 1940, almost two years after resection, both the colon and terminal ileum are normal in contour and demonstrated intermittent contractions. The colon to the right of the stoma has grown and veered to the right. There is no evidence of cicatrization.

## BELIEF IN DREAMS NOT ENTIRELY FALSE

Those who believe in the power of dreams to foretell future events may not be entirely wrong, Dr Smiley Blanton, New York City, points out in *Hygia, The Health Magazine*. Although a dream is not a supernatural omen, he says, it "may be prophetic in that it expresses something that we are consciously or unconsciously striving for and may attain."

While dreams express our strongest wishes, it requires proper study, often by a trained psychiatrist, to reveal their true meaning. "The study of dreams," Dr Blanton explains, "must consider two matters: (1) the dream itself, as it is remembered when the sleeper wakes up, and (2) its deeper meaning, hidden in the unconscious mind, concealed there by distortion, disguise, and symbolism."

"To get at this hidden meaning of our dreams, we have to go back to our childhood and trace briefly the mental development of the child. As he grows into a normal, moral, social being, the child is under constant necessity to put aside his selfish, dominating tendencies, but these remain in the unconscious mind, which stores

every experience from birth to death. These primitive, childish, selfish impulses are censored by our consciences and come out disguised, distorted and concealed. They may best be studied in our dreams."

"A means of concealment in dreams is symbolism. A familiar use of symbolism occurs in everyday language in which many symbolic words are used. The slang expression for money is 'dough', for dollars, 'iron men', and for \$1,000, 'a grand.' Similarly, we may dream of a lump of dough, meaning money, a series of toy iron soldiers, meaning dollars."

"The unconscious mind very often has a truer comprehension of our difficulties than our conscious mind has. A dream may often express a fear of illness, a fear which is based on an awareness in the unconscious mind that we are threatened with an illness, or that we are already suffering from this illness."

"Dreams are a safety valve. Life requires many renunciations that must be compensated for, and dreams are the royal way in which this is accomplished."



FIG 9



FIG 10

Fig 9 M K, wall of abscess cavity

Fig 10 M K, early involvement of mucosa and submucosa in proximal ileum, approximately 65 cm from the ileocecal valve

through an exit on the other side of the U mass, making its exit in the mesentery. An opening cannot be traced into the lumen. This entire loop forms a mass that is approximately the size of a grapefruit. The proximal 50 cm of small intestine show an essentially normal thickness and normal mucosa. At a point 40 cm from the ileocecal valve and extending for approximately 15 cm, the wall is of normal thickness, but the mucosa presents a few punched-out areas of irregular size and shape ranging up to 2 cm in length. The margins are somewhat heaped up. The excavated areas present a reddish brown color. A number of these areas show islands of mucosal tissue surrounded by areas from which the mucosa has been denuded. At approximately 25 cm from the ileocecal valve, together with the punched-out areas (which, by the way, become considerably increased in number and size and show considerable irregularity in shape), the wall becomes increasingly thick. In portions the eroded areas are larger in extent than the surrounding areas in which the surface is covered by mucosa. The wall in the terminal portion measures up to 2 cm in thickness. The thickening and erosion of the ileum end very sharply at the ileocecal valve. Whatever thickening occurs in the wall of the cecum and ascending colon is due to the surrounding pericecal and pericolonic adhesions. The wall itself does not partake of any increase in size. The appendix measures 10 cm in length and up to 0.8 cm in diameter. The lumen of the distal 2 cm is obliterated.

**Microscopic** All coats of the terminal ileum show considerable thickening. The increase in the size of the various coats is due to a number of causes, viz, edema, connective tissue scarring, and infiltration with mononuclear and polynuclear cells. The cells appear in large and small collections or are diffusely scattered. The mucosa shows numerous erosions with granulation tissue forming the surface. The sinus tract found in the mesentery is lined by granulation tissue and purulent exudate. The inflammatory process ends abruptly at the ileocecal valve.

The proximal ileum and colon wall show no changes (Figs 9 and 10).

#### *Diagnosis* Regional ileitis.

On his discharge from the hospital on December 11, thirty-four days after the resection, the wound had been healed for several days. When he was first permitted out of bed on November 20, he weighed 92 pounds. On discharge he weighed 103 pounds. He was having two soft bowel movements daily, not associated with any abdominal cramps. His appetite was good and he felt that he was regaining his strength.

**Subsequent Course**—Since his discharge from the hospital he has had occasional abdominal cramps, and these always followed gross indiscretion in his diet. Radiographic studies have been made about every six months, none of which has shown any recurrence of the disease. The patient has been able to resume the same physical activities as before his illness. His appetite at times is not good, at other times it is ravenous. He is on a high carbohydrate diet, liver, and vitamin B. The patient has had two loose stools a day and has not noticed any gross blood or mucus. He has two internal hemorrhoids which cause some pain if his stools are hard. He now weighs 110 pounds, which is as much as he has ever weighed. His one complaint is that he cannot put on more weight. The last radiographic studies made on October 15 and 16, 1940, indicated that the barium flowed readily through the colon. It showed that both the colon and terminal ileum were normal in contour and demonstrated intermittent contractions. The colon to the right of the stoma had increased in size and followed a course along the liver and then turned downward for a short distance to simulate a short ascending colon. There was no evidence of cicatrization (Fig. 11).

structures. It is probably the major source of supply.

The ascending pharyngeal artery is apt to be underestimated in its importance, and when it is the cause of hemorrhage from the nasopharynx a ligation of the external carotid artery at the bifurcation may be necessary. The ascending pharyngeal artery arises near the lingual artery and proceeds upward between the external and internal carotid arteries, then changes its course to lie between the internal carotid artery and the pharyngeal wall. In all instances where a hemorrhage from the internal carotid artery is suspected, especially when the hemorrhage is secondary to a pharyngeal infection, it is wise to ligate the ascending pharyngeal artery before tying the internal carotid artery. If the bleeding is stopped by ligating the ascending pharyngeal artery, a much more serious ligation of the internal carotid artery may be avoided. This artery supplies the pharynx, palate, and dura.

The internal maxillary artery is the more important of the two terminal branches of the external carotid artery (superficial temporal and internal maxillary). It arises from the bifurcation of the external carotid artery located just inferior to the lobule of the ear where the internal maxillary artery immediately turns forward to be obscured by the ramus of the jaw. It supplies blood to the ear, teeth, muscles, nasopharynx, eye, and adjoining structures.

The middle meningeal artery is given off early in its course. The bleeding encountered during intracranial operation which is due to injury of the middle meningeal artery can, as a last resort, be controlled by ligating the external carotid artery.

An important branch for the nose and throat surgeon to remember is the sphenopalatine or nasopalatine artery. This branch enters the nose through the sphenopalatine foramen and may be injured during operations on the sphenoid sinus. Again, ligation of the external carotid artery will control an otherwise uncontrollable hemorrhage. Branches from the nasopalatine artery supply the nasal mucous membrane, and the trunk proceeds across the inferior surface of the body of the sphenoid. When the surgeon contemplates removal of the floor of the sphenoid sinus, the nasopalatine artery should be ligated as a precautionary measure.

The internal carotid artery is easily identified because it gives rise to no major arterial branches in the neck. The caroticotympanic

branch is given off in the carotid canal to supply blood for the middle ear. The injury of this branch by a myringotomy may cause profuse hemorrhage which is difficult to control. The destruction of this artery leaves an aperture in the wall of the middle ear which permits pus to gain access to the pericarotid region. This pathway to the cells of the petrous pyramid, cavernous sinus area and even the cranial fossa without the necessity of mastoid cell infection is well worth remembering.

A major branch of the internal carotid artery is the ophthalmic artery. It is of especial interest to the otolaryngologist because it gives rise to the anterior and posterior ethmoidal arteries. The posterior ethmoidal artery makes its exit from the orbit through the posterior orbital foramen. It supplies blood to the posterior superior part of the nasal cavity. The ethmoidal artery passes through the anterior ethmoidal foramen upon the lamina cribrosa and re-enters the nose through the lamina cribrosa to supply the anterior part of the nasal cavity.

The anterior ethmoidal artery serves as a useful surgical landmark. According to the personal statement of Dr. Robert E. Buckley, the anterior ethmoidal artery indicates the level of the lamina cribrosa. It is safe to do surgical procedures on the ethmoid cells below this level, but one must proceed with extreme caution above the artery. The safe way is to ligate the artery as soon as it is identified. At least a ligature might be so placed that the vessel would be under control. When the anterior ethmoidal artery is cut it is apt to retract within the orbital capsule, causing a hematoma or bleeding which is difficult to control. The flow of blood in this vessel is from the orbit into the nose. Ligating the internal carotid artery is the court of last resort.

The thyroid axis or thyrocervical is another main artery supplying blood to the pharynx, esophagus, and trachea. It gives off the inferior laryngeal artery. The thyroid axis being a branch of the subclavian artery makes the common carotid and the subclavian arteries the two major sanguiniferous ducts.

These few short paragraphs are broad maps that have served me well as a mental assurance in disturbing situations. Perhaps no physician in otolaryngology could say that he had never been disturbed by hemorrhage. Surgery of the head is especially susceptible to the complication of hemorrhage. Therefore, it behooves all of us to acquaint ourselves

# HEMORRHAGE IN OTOLARYNGOLOGY

## Methods of Control

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**H**EMORRHAGE is the one outstanding occurrence in otolaryngology which practitioners in this specialty must learn to treat with a confidence that is the product of thorough knowledge. Spontaneous hemorrhage, a hemorrhage that occurs during operation, or a hemorrhage that occurs as a post-operative complication may be most disturbing or even end in the death of the patient. The best advice for any physician who must control hemorrhage is to remain calm. At the same time this advice is most difficult to follow. The best insurance of an unperturbed procedure is a complete knowledge of, and familiarity with, anatomy. The theme of this paper is an effort to show the reader how situations dealing with vascular accidents may be under the control of a physician who has an anatomic perspective.

## Blood Supply of the Head

The main and practically the only arterial channels are the carotid and the vertebral arteries. The right common carotid artery is the mesial division of the right innominate artery. The peripheral division is the subclavian artery. The right innominate artery arises from the arch of the aorta. The left common carotid artery arises directly from the arch of the aorta between the left subclavian artery and the innominate artery.

The vertebral arteries are branches of the subclavian arteries and are of particular interest to the otologist. After they have joined to form the basilar artery, the two internal auditory arteries are formed from the common trunk. The internal auditory artery furnishes the only arterial blood supply for the inner ear. The fact that the same basilar artery that gives rise to the internal auditory arteries also furnishes the major portion of blood vessels supplying the vestibular nuclei is most significant.

This condensed survey leaves the thyroid axis artery (thyrocervical), also arising from the subclavian, as the sole remaining arterial channel for supplying the head and neck structures.

It seems necessary to carry the description of arterial channels a little further. The common carotid artery divides on both sides of the neck to form the internal and external carotid arteries.

The internal carotid artery proceeds directly into the cranial cavity. It gives off only a few small branches. The position of the internal carotid artery is lateral to the external carotid artery. In its course the internal carotid immediately proceeds to a deeper level in the neck. The external carotid artery lies mesial to the internal carotid artery, and this commonly used nomenclature may confuse identification. The external carotid artery does not depend alone upon its position for identification since it is easily recognized by the sizable arteries that arise from its trunk near the bifurcation of the common carotid artery.

The division of the common carotid artery into the internal and external carotid arteries occurs near the superior cornu of the thyroid cartilage. When the patient's head is turned away from the surgeon and then extended, the bifurcation of the common carotid artery lies behind and a little below the angle of the jaw.

The external carotid artery also has a bifurcation. The two trunks are the superficial temporal artery and the internal maxillary artery. Arising from the external carotid between the two bifurcations, i.e., that of the common carotid and of the external carotid, are several arterial branches. They are the superior thyroid, lingual, external maxillary, sternocleidomastoid, occipital, posterior auricular, and ascending pharyngeal arteries. The first two, i.e., the superior thyroid and lingual arteries, are easily located and ligated through the same surgical approach used for locating the bifurcation. While the third artery, the external maxillary, can be ligated, it is a little more difficult since it is higher and more deeply placed than the lingual and superior thyroid. The sole function of the sternocleidomastoid branch seems to be a blood supply to the muscle of the same name. It is relatively unimportant.

The occipital artery supplies blood to the muscles and other structures in and around the ear. The posterior auricular artery joins the occipital artery in supplying blood to the ear.

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result in a thoroughly angry patient, antagonistic parents, and a complete loss of emotional control on my part. Under anesthesia, the hemostasis is accomplished painlessly and in an expeditious manner.

BLOOD SUPPLY OF THE TONGUE

Ascending palatine tonsillar	External maxillary	} External carotid
Palatine	Ascending pharyngeal	
Descending palatine	Internal maxillary	
Dorsalis linguae	Lingual	

### Adenoid Hemorrhage

These hemorrhages can be serious. Fortunately they occur more often as the result of tissue tags left hanging at the time of operation. These tags or remnants of tissue seem to act as wicks that cause a slow, unnoticed, prolonged loss of blood. Recurrent swallowing either before or after the patient's recovery from the anesthetic should be an important warning sign. The bleeding is easily controlled in most instances by briskly rubbing the nasopharynx with a gauze-covered finger. The Yanbauer direct vision speculum may be used to locate and tie any blood vessel that continues to bleed. The need to use tampons of any sort is rare. Attacks of acute otitis media following the use of such tampons have caused me to stop using them. I avoid the use of postnasal plugs, except in rare instances, for the same reason.

The area in which the adenoids are located represents a danger area for hemorrhage. Benign and malignant tumors, congenital cysts, or abscesses that have escaped observation may be discovered only because of a prolonged hemorrhage following adenoidectomy. Thus bleeding can be most difficult to control. The blood supply is from many sources and abundant. The naturally abundant blood supply may be augmented by additional vessels attendant on new growth or prolonged inflammatory processes. In using an electric nasopharyngoscope to view the posterior nasopharynx, numerous tortuous, dilated, superficial blood vessels will frequently be seen. The blood vessels that supply the area

include the external and internal maxillary branches of the external carotid artery and the pharyngeal branch of the subclavian artery, the two main arterial trunks furnishing the blood supply of the head. They are indeed a formidable array and hold a good reason for occasionally resorting to radiation therapy in preference to surgery when the decision rests in timid hands.

Dr John F. Erdman used a procedure and an expression in relation to malignant growths in the head which have common-sense appeal. The procedure deprived the growth of its blood supply or, as he expressed it, "starved" the growth. This starving process has three good features. One is the advantage gained when an operation becomes necessary. Second, radiation is more effective. Third, there is a practical elimination of any danger from a possibly fatal, spontaneous hemorrhage.

Because of the varied locations through which the arteries pass and the difference in their main source of supply, this starving process would be of less value in the nasopharynx than in other locations for malignancies of the head.

### Hemorrhage from the Septum

The common "nose bleed" usually arises from the Hesselbach's area of the nasal septum. The point of bleeding is easily located and cauterized. Chemical or electrical cautery is effective. In elderly people it is always necessary to determine the blood pressure and the condition of the arteries. Chemical examination of the blood is advisable. Nasal hemorrhage in the aged may be difficult to control. Recurrences are frequent and portend trouble in other locations besides the nose. Nasal hemorrhages are a frequent accompanying feature of adolescence and the menstrual period in the woman. Local hemostasis must be followed by a correction of glandular maladjustment.

Traumatism of the nose causes septal bleeding, and, although this type is accompanied by an unbalanced emotional situation, the bleeding stops spontaneously. Nasal packs should be avoided, but they are sometimes

BLOOD SUPPLY OF THE SOFT PALATE AND NASOPHARYNX

Ascending palatine	External maxillary	} Internal maxillary	} External carotid	} Common carotid
Ramus tonsillaris	Middle meningeal			
Accessory meningeal	Descending palatine			
Accessory of pterygoid canal	Sphenopalatine			
Major and minor palatine	} Ophthalmic	} Internal carotid	} Subclavian	
Lateral postnasal				
Postnasal to septum				
Ascending pharyngeal (pharyngeal branches)				
Posterior ethmoid	} Thyroid axis			
Pharyngeal branch of inferior thyroid				

with all methods that may be used in the control of hemorrhage

### The Tonsillar Fossa

The most common operation in otolaryngology is a tonsillectomy. The most common source of hemorrhage in otolaryngology is the tonsillar fossa. Under many circumstances hemorrhage from the tonsillar fossa represents a most difficult area in hemorrhage control.

Perhaps an illustration will help to accentuate the difficulty encountered in control of tonsil bleeding. A patient upon whom a tonsillectomy had previously been performed started bleeding from the tonsillar fossa. A special tendency toward bleeding had been claimed. Laboratory tests including a blood Wassermann test, bleeding time, coagulation time, and an examination of the blood platelets were reported as being normal. The operation was skillfully performed, and a complete removal of the tonsil had been accomplished. All the bleeding areas were ligated at the time of the operation. Some hours after the operation a secondary diffuse hemorrhage began. Repeated trips back to the operating room finally resulted in the control of the bleeding. All known methods had been tried without success. The patient was so exsanguinated that repeated transfusions were necessary. Medications were given without noticeable effect. Practically all hope for the patient's recovery had been abandoned when the bleeding ceased.

A peritonsillar abscess, when incised, may cause profuse bleeding both at the time of incision and as a postoperative complication. Packing with iodoform gauze is effective in most instances. When bleeding persists, the internal carotid artery or the ascending pharyngeal artery may have to be ligated. Do not make the mistake of waiting too long. A sloughing vessel can cause death quickly.

The methods used to control bleeding from the fossa following the surgical removal of a tonsil are varied. They are selected according to the experience of the individual surgeon. I have tried many methods and many medications designed to stop bleeding. A few simple facts remain. The most important fact is that "bleeding will not stop until enough time has passed following infliction of a surgical wound to allow the normal clotting functions of the blood to act." A gauze tampon, held in the fossa by means of a little pressure, controls bleeding until the normal coagulation process becomes effective. Changing the

tampon when it becomes soiled seems to help. Except when profuse pulsating hemorrhage occurs, I do not attempt to stop bleeding by other means than tamponage. If the bleeding continues after the waiting period (ten minutes) has elapsed, I grasp the bleeding vessel with a hemostat. A slip noose is made from a number 1 or number 0 catgut and a hemostat fastened on the nonsliding strand. This second hemostat guides the loop over the end of the first hemostat. When the free strand is pulled tight, both artery clamps are removed. The loose ends of catgut are cut at a little distance from the knot. A time-saving procedure is to leave the folded gauze in the first tonsillar fossa while the second tonsil is being removed. The first operative field is commonly dry by the time the operation on the second is completed.

The foregoing remarks apply to patients under general anesthesia. Local operations on the tonsils are seldom followed by any hemorrhage except from major blood vessels. These should be ligated at once.

Occasionally, an all-inclusive suture must be placed in the fossa "purse-string fashion" to control the bleeding. Another fact is that "the more manipulation, bruising, and laceration of tissue during the operation, the greater the postoperative discomfort, the longer the convalescence, and the more extensive the slough." Finally, "Never allow the patient to leave the operating room until both fossa are absolutely dry." Many a night's rest will be preserved by observing this dictum.

The thought of postoperative tonsil hemorrhage is a disquieting factor for ten days following tonsillectomy. We may consider any persistent bleeding after a patient has returned to his room as postoperative. If bleeding occurs after a tonsillectomy under local anesthesia, it usually starts about two to four hours after operation. An unusually effective method of controlling this bleeding is by injecting novocain and epinephrine solution in the area of the bleeding. If the bleeding is not controlled, at least the subsequent ligation or manipulation is rendered painless. The same procedure may be used in cases of hemorrhage following tonsillectomy under general anesthesia. Posttonsillectomy hemorrhage, especially in minors, is best handled in the operating room. A trial effort may be made to control bleeding, but if any difficulty is encountered return the patient to the operating room and tie off the offending vessel. I have tried many methods in order to avoid giving the second anesthetic. They usually

Two types of operation are performed on diseased ethmoid cells. One approach is intranasal and the other is external. The intranasal operation has the disadvantage of poor visualization with which to locate bleeding points. One must resort to frequent rest periods attendant on packs, moistened in hemostatic solutions, which diminish the obscuring blood. The surgeon seldom is forced to ligate major vessels, although logically it would seem to be a frequent necessity. The important arteries encountered in ethmoid surgery, i.e., the anterior and posterior ethmoid arteries, seem to escape injury when the surgeon knows his anatomic relations. Anomalies do occur, and their damage in this instance is excusable. If a surgeon finds he has injured the anterior ethmoidal artery, he should realize he is working in dangerous territory. This artery marks the level of the cribriform plate of the ethmoid.

External operations on the ethmoid sinus have the advantage of much better visualization. The anterior ethmoidal artery especially is easy of access and readily ligated. It is policy to preserve this artery as a landmark. Fortunately, intranasal operations are losing some of their popularity. More surgeons are favoring the external procedure. One important reason for this change is the improved cosmetic results obtained by skillful surgeons.

After the operation is finished, all bleeding is controlled before the patient leaves for his room. Packing is used only if absolutely necessary to control bleeding. If packing is used, it is removed as soon as possible. Some surgeons believe that packing increases the chances of complications.

### Frontal Sinus Hemorrhage

This is a rare occurrence. Intranasal operations on the frontal sinus are not popular. This is largely because the end results have been less than satisfactory. The danger of operative or postoperative hemorrhage has, therefore, diminished. In the external operation the entire field is easily seen, and any bleeding area may be controlled. Since most surgeons who perform operations on the frontal sinuses include the ethmoids as part of their technic, the common blood supply will be stated.

BLOOD SUPPLY OF THE FRONTAL AND ETHMOID SINUSES

Sphenopalatine	Internal maxillary	External carotid	Common carotid
Anterior ethmoidal	Ophthalmic	Internal carotid	
Posterior ethmoidal			

### General Nasal Hemorrhage

Blood dyscrasias may be the cause of nasal bleeding. A thorough examination of the blood is the diagnostic measure employed, and at the same time it indicates the proper treatment. Only one note will be mentioned regarding blood examinations. I have discontinued the routine tests for coagulation and bleeding time. If the patient or parent requests these tests, they are done for self-protection. Occasionally, a previous history of uncontrolled bleeding warrants the tests being done. My reason for this decision is purely the result of an impression. If my impression is correct, there is no relation between the patients who bleed and the ordinary tests used to predetermine their bleeding capacity. The one exception is that rare patient, a true hemophiliac. Tags or remnants of tissue, untied blood vessels or those whose ligatures have slipped, sloughing of tissue or overexertion most frequently cause bleeding.

### Aural Hemorrhage

Bleeding from the ear may be spontaneous, may be the result of injuries to the head, or may be caused by operations. The proximity of the carotid artery anterior and the jugular vein posterior and inferior offers a real opportunity for critical consequences following surgery in this location. Dehiscences occur in the bony partitions separating the major vessels from the middle-ear cavity. These dehiscences may be caused by many types of bony defect. The openings for nerves, blood vessels, and cells are normal examples. A simple myringotomy may injure a blood vessel, and this will demand a major emergency procedure. It is most fortunate that tamponage will control most bleeding from this area. One word of caution: the ear should not be touched when the history of head injury leads the examiner to believe there is a fracture of the base of the skull. Secondary infection with a subsequent meningitis is a real danger.

The sigmoid sinus and its emissary vein are the only blood vessels that are apt to cause disturbing hemorrhage during mastoid surgery. Postoperative bleeding may also be due to a sloughing of the vessel walls. The worst part of an accidental injury to the vein wall during operation is the momentary shock for the surgeon. The quick rush of blood which follows an injury to the vein is quite alarming. Pressure effects complete control. Even the finger placed lightly on the vein will control bleeding if the opening in the vein wall is small. Muscle tissue, flat-folded iodoform

necessary to control prolonged nasal bleeding due to traumatism. Simple prolonged pressure is effective in most "nose bleeds." Septal bleeding may be severe, recurrent, and depleting. A submucous resection of the nasal septum, strangely enough, will prove effective in these cases. It is understood that the operative technic includes the removal of the incisor crest of the palatine process of the superior maxillary bone. This crest houses the incisive canals and the terminal branch of the nasopalatine artery. Also, during operation it may be necessary to deal with bleeding from this area. Two methods of control are effective. One is to place a blunt instrument over the bony opening and give the instrument a sharp tap with a hammer. Second, squeeze the crest with a Lutz forceps. Do not apply enough pressure to bite through the bone. The usual type of bone wax may be used, but it is difficult to manipulate.

Hemorrhage during operation may be annoying but it seldom reaches alarming proportions. Lacerated "flaps" probably cause most of the bleeding. Postoperative hemorrhage may be troublesome. Packing is the most efficient control. If a hematoma has formed between the flaps, it must be evacuated before either a good result or the cessation of bleeding can be expected. Many surgeons incise one flap along the floor in order to obtain proper drainage for any blood that might collect. This incision must be far enough anterior to miss the posterior septal branch of the sphenopalatine artery. Hematomas and septal abscesses are prevented by a drainage incision. The lacerated condition of the "flaps" following some submucous resections make further drainage superfluous.

Vaseline gauze still remains the dressing of choice to prevent postoperative bleeding. Many ingenious devices have been tried to obviate the use of gauze, but they have proved less desirable for me. Also, I have had more complications when no effort was made to hold the "flaps" in apposition.

BLOOD SUPPLY OF THE SEPTUM

Superior labial	External maxillary	External carotid	Common carotid
Sphenopalatine	Internal maxillary		
Posterior ethmoidal	Ophthalmic	Internal carotid	
Anterior ethmoidal			

crosses the nasopharynx in the mucous membrane covering the roof of the nasopharynx which forms the floor of the sphenoid sinus.

The internal carotid artery may be partially or completely exposed in its course past the sphenoid cavity. The bony canal of the internal carotid artery may encroach on the space of the normal sphenoid. Any major injury to the internal carotid artery can result in death from hemorrhage before control can be established. A sphenoid sinus filled with bleeding granulation tissue, in addition to an injured sphenopalatine or carotid artery, is a situation to cause a tremor in the legs of the most intrepid surgeon. A ligature around the common carotid artery is the only hope.

### The Maxillary Sinus Hemorrhage

This type of hemorrhage may be the most difficult to discover and requires radical measures to control. Spontaneous bleeding may occur from granulation tissue or malignancy. Such a simple operative procedure as a "window opening" or antrotomy may cause injury to the palatine artery. The course of this artery varies, reaching a point so far forward that the usual removal of bony antral wall would include the artery. Packing with pressure, mutilation of the bony canal, pinching the bone with a strong forceps and local application of epinephrine may all be tried but sometimes without results.

Operations performed on the antrum are frequently accompanied by a profuse general bleeding. When the pathologic contents of the antrum have been removed, this bleeding stops. A Caldwell-Luc operation is the only procedure that will stop the spontaneous hemorrhage caused by granulation tissue in the antrum. There should always be a close scrutiny for malignancy of any patient who is subject to recurrent unlocalizable nasal hemorrhage.

BLOOD SUPPLY OF THE MAXILLARY SINUS

Posterior superior alveolar	Internal maxillary	External carotid
Infraorbital		
Sphenopalatine		

### Hemorrhage from Ethmoid Sinuses

Spontaneous hemorrhages from the ethmoidal cells occur also from necrosing granulation tissue and malignancies. This statement does not eliminate the possibility of syphilis as a cause, but it is uncommon. Again, packing is the court of first resort with ligation the last.

### Sphenoid Hemorrhage

The sphenoid sinus is rightly considered as being in a field potentially dangerous because of hemorrhage. The sphenopalatine artery

posure of the major blood vessels is less difficult. Fatal postoperative hemorrhage following laryngectomy may also be explained on the basis of this same inaccessible and diversified blood supply. Modern technic used

in laryngectomy makes these operations practically bloodless. Postoperative hemorrhage, however, occurs too frequently as a complication.

121 East 60th Street

## I'M ALLERGIC

Some years ago I went to see  
A doctor where I live  
About some blotches on my skin  
Says he, "You're sensitive"

Still later when my heath got short  
Says Doctor B "You must  
Completely segregate yourself  
From any sort of dust"

My nose then gave secretions which  
Was far beyond my needs,  
"It's pollen does it," I was told.  
"Allergic to some weeds"

My headache too, it seems, was due  
To paint containing lead,  
Just being sensitive to it  
Made hives inside my head

So now I shy this way and that  
Afraid to breathe or eat,  
Since pains in joints and tummy too  
Come from my love for meat

I wander up and down the world  
In search of something new,  
It seems I'm sensitive to starch  
And fats and proteins too

I've lived for years on liquid food  
But now I'm through I fear—  
Today they say I'm sensitive  
To whiskey, gin, and beer  
—*Bulletin, Academy of Medicine of Cleveland*

## WEEDING THEM OUT

"More than 5,000 cases of syphilis have already been found among Selective Service candidates," Assistant Surgeon General R. A. Vonderlehr of the United States Public Health Service said at a Regional Conference on Social Hygiene and National Defense in St. Louis. He presented the findings of a preliminary tabulation of 120,000 blood tests and physical examinations for syphilis performed on Selective Service candidates in twenty-three states during November and December, 1940.

Rates among the states range from 7 to 114 per 1,000 men examined, Dr. Vonderlehr reported. He divided the twenty-three states into four groups according to the extent of the syphilis problem they presented.

"It will be noticed," the Assistant Surgeon General pointed out, "that the two groups with the highest average rates are composed of southern states. Comparison shows that they also were among those states which had the highest syphilis rates for men drafted in the last World War." New York State is in group II, with an average rate of 19 per 1,000.

## LINE FORMS THIS SIDE

Ad detected by R. D. in the *Cleveland Plain Dealer*—VIVACIOUS blond. Reliable, energetic, desires work in doctor's or dentist's office.  
LA 2893 —J.A.M.A.

## THE "YOUNG" PHYSICIANS

The young practitioner may be surprised to find that the alert and progressive physician in his community is not necessarily his classmate nor one who has been in practice four or five years. He may be the professor under whom he studied at medical school or the white-haired doctor around the corner, observes the editor of *Medical Annals of the District of Columbia*.

Mental youthfulness has little to do with years. It is a quality that some men have and others do not. A young man can be as intolerant, selfish, and conservative as a sixty-year-old. On the other hand, the mature individual may find each day a new adventure, giving zest and significance to life.

## BRITISH "CURE" FOR NAZIS

British physicians are giving captured Nazis a dose of their own medicine, according to the English magazine *Aeroplane*. The "cure" originated, the periodical states, when an especially arrogant German pilot was brought into a base hospital. Although badly shot, he persisted in telling the staff what he thought of English medical science.

The doctors said nothing. They stitched and dressed his wounds, gave him a blood transfusion. Then, when he was comfortably settled in bed, they told him: "Now, my lad, you have two pints of good Jewish blood in you. We hope it will improve your manners." This time it was his turn to be silent.

## BLOOD SUPPLY OF THE EAR

Middle Ear, External Ear, and Mastoid				
Anterior auricular	{	Superficial temporal		
Mastoid		Occipital		
Auricular	{	Posterior auricular		External carotid
Stylomastoid				
Auricular	{		Internal maxillary	
Occipital				
Deep auricular	{			
Anterior tympanio				
Superficial petrosal	{	Middle meningeal		
Superior tympanic		Ascending pharyngeal		
Inferior tympanic	{	Internal carotid		Common carotid
Caroticotympanio				
Internal Ear				
Internal auditory	{	Basilar	{	Vertebral
			{	Subclavian
Eustachian Tube				
Ascending palatine	{	External maxillary		
Pharyngeal	{	Middle meningeal		
Accessory meningeal	{		Internal meningeal	Common carotid

gauze, or a Vaseline-covered, cotton "blowout patch" have all proved effective in controlling the hemorrhage from the smaller injuries. If necessary, the vein may be completely blocked off by an adequate pressure. Bleeding from the emissary vein is easily stopped by the bone wax.

Minor bleeding, which is annoying but not dangerous, may occur during operation. An artery in the floor of the middle fossa in the epitympanic or epiantral region may be troublesome. Removing the dural plate with the enclosed artery is effective in stopping the bleeding. Granulation tissue in the mastoid and middle ear may bleed rather profusely, but the bleeding ceases after the pathological tissue is removed.

Postoperative bleeding from granulations may be serious. On two occasions I have had to control serious postoperative bleeding from the mastoid wound when granulation tissue was the cause. On both of these occasions the bleeding was sufficiently profuse to demand transfusions. The bleeding was stopped by reopening the mastoid wound and wiping out the granulations. No bleeding vessel was tied or seen in either case. The bleeding ceased immediately and did not recur in either instance.

This type of hemorrhage must not be confused with the rapid and most dangerous bleeding that ensues after sloughing of the sigmoid sinus wall. Immediate, complete opening of the mastoid wound plus local pressure until the sinus can be obstructed at both ends is apt to prove a real lifesaving measure. Ligation of the jugular vein is not indicated because it will increase venous pressure.

Unless the patient is extremely exsanguinated, no transfusion should be given until the

surgeon is reasonably sure that the vascular channels will stand the increased pressure. Small transfusions should be given as soon as it is reasonably safe.

I have seen 2 cases of venous aneurysm in and around the ear. They are uncommon but offer a real danger to the patient. Many methods of curing these aneurysms have been tried without conspicuous success. Their tendency to recur circumvents surgery and radiation is not entirely satisfactory.

### Laryngeal Hemorrhage

Hemoptysis has been almost synonymous with pulmonary tuberculosis. Since direct endoscopy has reached its present perfection, a thorough examination of the respiratory tract is possible. Now, any bleeding point accessible to the newer methods can be located exactly and treated. Bleeding frequently occurs from ruptured blood vessels, ulcerations, and growths in the larynx. Except for the major bleeding, these areas can be directly treated by cautery or coagulation. Aspirations on the structure of the larynx are no longer the formidable procedures they were before direct suction could be applied to keep the field clear of blood.

Spontaneous hemorrhages in the larynx have caused death through drowning or asphyxiation. Unfortunately, the blood supply of the larynx is from widely separated sources, and quick location of the responsible artery is difficult. Fortunately, the same incision used for a tracheotomy may be so revised that ex-

### BLOOD SUPPLY OF THE LARYNX AND TRACHEA

Superior laryngeal	Superior thyroid	}	External carotid
Tracheal			
Inferior laryngeal			

TABLE 1—TELLURITE TEST IN THIRTY CASES OF DIPHTHERIA

Number of Cases	Tellurite Test		False Negative Error
	Positive	Negative	
30	23	7	23%

TABLE 2—TELLURITE TEST IN TWENTY NONDIPHTHERITIC CASES

Diagnosis	Number of Cases	Tellurite Test		False Positive Error
		Positive	Negative	
Acute tonsillitis	17	9	8	
Infectious mononucleosis	2	1	1	
Vincent's angina	1	0	1	
Total	20	10	10	50%

results of Murray<sup>5</sup> and those from England<sup>3,4,6</sup>. The predominating organisms found in the throats of the nondiphtheritic cases included *Str. hemolyticus*, *Str. viridans*, *Staph. albus*, *Staph. aureus*, and Vincent's organisms. Staphylococci were isolated more often than in the diphtheritic group. There was no correlation between the bacteria found and the result of the tellurite test.

#### Comment and Summary

Reports from widely separated localities fail to confirm the accuracy of the tellurite test. Our results show a false negative error of 23 per cent in bacteriologically proved cases of diphtheria and a false positive error of 50 per cent in nondiphtheritic cases. Numerous organisms, including staphylococci and streptococci, reduce tellurite salts in culture mediums producing black or gray colonies. The presence of these bacteria in the throat probably interfere with the tellurite test as an aid in the diagnosis of diphtheria. It has been suggested that the type of *C. diphtheriae* found in different localities might account for some of the false results with the tellurite test. We did not subtype our cultures, but from the reports of the authors cited above<sup>3,4,5</sup> it seems that the results do not depend upon the type of organism present. Murray<sup>5</sup> pointed out that the incidence of the gravis strain varied between 10 and 93 per cent in the different series of diphtheria cases reported. Murray agreed with Tomlin that the type of *C. diphtheriae*

TABLE 3—TELLURITE TEST RESULTS REPORTED IN THE LITERATURE

Authors and Location	Diphtheria Cases			Control Cases		
	No. of cases	Tellurite test, in negative percentage	False negative error in percentage	No. of cases	Tellurite test, in positive percentage	False positive error in percentage
Manzanillo, B. Aires	40	3	7	35	0	0
Fox, Rhodes, and Lack, Evanston, Illinois	17	0	0	10	1	10
Tomlin, Leicester, England	28	0	0	15	9	60
Tombleson and Campbell, England	130	22	17	47	22	47
Murray, Johannesburg, South Africa	32	5	16	30	11	36
Cooper, Bristol, England	57	13	23	27	15	55
Present report, New York	30	7	23	20	10	50

had no effect on the results of the tellurite test.

We concur with Tombleson and Campbell<sup>3</sup> who state that "in view of these serious objections, reliance cannot be placed on the immediate tellurite test in confirming or excluding a clinical diagnosis of diphtheria and it cannot replace bacteriologic methods at present in use."

We wish to thank Dr. R. S. Muckenfuss, director of the Bureau of Laboratories of the New York City Department of Health, for his helpful cooperation. Miss Alice Mann of the Bureau of Laboratories prepared the tellurite solution and did much of our bacteriology.

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#### IT'S A SMART COUNTRY, FOLKS

An Englishman was visiting Milwaukee, reports the *Milwaukee Medical Times*, and while driving along the highway, saw a large sign, "Drive slow. This means you!"

The Englishman stopped in surprise and exclaimed, "My word! How did they know I was here?"

#### THE BATHTUB PERIL

"Safe as at home" is an old saying, but more accidents happen in the home than in a factory. According to statistics quoted in the *Medical Record*, the home bathtub is a thousand times more dangerous than a railway train and 200 times more dangerous than a fight in a passenger plane.

# THE TELLURITE TEST FOR THE DIAGNOSIS OF DIPHTHERIA

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IN 1938 Manzullo of the Bacteriologic Institute of the National Department of Hygiene at Buenos Aires reported a method for the diagnosis of pharyngeal diphtheria which required only ten minutes.<sup>1</sup> He observed that pieces of diphtheritic membrane that were incubated in a blood-tellurite medium turned black. Subsequently, he applied a 2 per cent solution of potassium tellurite directly to the diphtheritic membrane *in situ* and found that in almost all cases it turned black or gray in ten minutes. When the tellurite solution was applied to nondiphtheritic membranes no change in color occurred.

These important observations were confirmed in this country by Fox, Rhoades, and Lack.<sup>2</sup> However, several reports from England and Africa<sup>3,4,5</sup> failed to substantiate Manzullo's contribution. They found that from 16 to 21 per cent of the diphtheria cases failed to give a positive test. On the other hand, the same authors, as well as Tomlin,<sup>6</sup> found that from 36 to 55 per cent of their cases with nondiphtheritic membranes gave a positive test.

In a letter to the *British Medical Journal* Tynan,<sup>7</sup> of Dublin, commented on his results in 75 cases. He obtained 13 per cent false negative tellurite tests in 54 cases of diphtheria and 52 per cent false positive tests in 21 control cases. Woodcock, of Leeds, England, studied 200 cases with a membrane or exudate and also reported his results in a letter to the same journal.<sup>8</sup> He stated that one must conclude that the tellurite test is of no real help to the clinician.

## Procedure

We tried the tellurite test at the Willard Parker Hospital during 1938 and 1939. The technic outlined by Manzullo was carefully followed. A fresh 2 per cent solution of potassium tellurite was prepared every thirty days. A cotton swab dipped in the solution was applied to the membrane, care being taken not to touch the tongue. No patient who had used a gargle or local application of peroxide,

tannic acid, or methylene blue was included in the series. The membrane was observed for change in color ten minutes and again thirty minutes after application of the tellurite solution.

Each case received careful bacteriologic investigation before and after the tellurite test was performed. Löffler cultures were sent to each of three laboratories, and virulence tests by the guinea-pig method were made in nearly all cases from which *Corynebacterium diphtheriae* was recovered. In addition, a report was made of the other organisms present in the culture. The results are tabulated in Tables 1 and 2.

## Material and Results

Only patients who had an easily visualized membrane and who had not used a gargle or local application before admission were subjected to the tellurite test. All cases tabulated as diphtheritic had one or more cultures showing *C. diphtheriae*, and most of them had a positive virulence test. Cases tabulated as nondiphtheritic controls had a tonsillar membrane from which all cultures (repeated on successive days) were negative for *C. diphtheriae*. The percentage of bacteriologically missed cases of diphtheria was reduced to a minimum by taking repeated cultures. These strict criteria reduced considerably the number of cases used for statistical evaluation.

There were 30 cases of diphtheria in 7 of which the tellurite test was negative, giving a false negative error of 23 per cent. This agrees with the error found in the larger series (Table 3) reported by Tomblinson and Campbell (17 per cent), Cooper and his co-workers (23 per cent), and Murray (21 per cent). Other organisms isolated from the throat cultures in addition to *C. diphtheriae* were *Streptococcus viridans*, *Str. hemolyticus*, *Staphylococcus albus*. There was no correlation between the presence of these organisms and the result of the tellurite test.

Our nondiphtheritic control group included 17 cases of tonsillitis, 2 cases of infectious mononucleosis, and 1 of Vincent's angina. In these 20 cases, from which *C. diphtheriae* could not be isolated, the tellurite test was positive in 10, giving a false positive error of 50 per cent (Table 2). This agrees with the

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chemical reducing agents The action of such reducing agents on the skin varies with the status of the epidermis—whether intact or ruptured Furthermore, with intact epidermis, the action varies with the concentration Briefly, on the intact epidermis, concentration of less than 6 per cent acts as a keratoplastic, higher than 6 per cent, reducing agents act as keratolytics, but they first increase the thickness of the corneum which ultimately lifts off by reason of granular layer cell irritation Discoloration and sensation of itching (pain in keratolytic concentration) accompany these activities The action on the exposed cutis does not depend upon the concentration but upon the anatomic structure, and there is an accompanying reaction due to induced inflammatory changes Parasites are destroyed both by the chemical action of removing needed oxygen and by the lifting of the epidermis and physical removal of implanted ova, etc.

Salicylic acid is an ingredient in so-called Whitfield Ointment The ointment has been included in the official compendium under this name. Few physicians who order it know that it was never offered by Whitfield for the treatment and cure of ringworm. Whitfield described the salicylic acid-benzoic acid combination in soft paraffin and coconut oil (the original formula) as a preliminary application to the thickened horny layer of tinea-infested skin. Whitfield applied chrysarobin in ether, chloroform, and acetone as the actual fungicide.

### Phenol

The next series of prescriptions to consider includes phenol. Few prescribers made any distinction between crystal phenol and liquefied phenol.

The phenol crystals are not soluble in the calamine and zinc lotion, for example They float on top near the neck of the bottle and, despite directions for shaking, they reach the skin in the crystal form The experienced pharmacist disregards the prescriber's order and includes liquefied phenol A mixture of liquefied phenol and an equal amount of glycerin is miscible with water There is one part of distilled water to each nine parts of the melted phenol.

There is reason to believe that the mixture of a mercury compound and phenol is a bad one from the pharmacologic standpoint as well as from the effective or realistic one on the skin In theory, the phenol reduces the mercury salt to the metallic mercury In

clinical application, the mixture has led to the appearance of pigmentation

### Menthol

The problems offered by phenol mixtures apply to those with the other most popular alcohol—namely, menthol

Mixtures of menthol and phenol are very popular The two ingredients are found in combinations listed for each in the two series immediately preceding Phenol and menthol form a liquid when triturated together The liquid is soluble in not less than 40 per cent alcohol If improperly or incompletely dissolved, combinations of menthol with its incompatibilities may be very irritating to the skin Since they are offered for their anesthetic effect on the specific nerve endings for pain, additional irritation is unsought. The sensation of coolness on application of menthol is due to the stimulating effect on the nerve endings for cold

### Calamine

Brief comment is given on some other prescriptions We begin with calamine and zinc lotion

Calamine and zinc lotion is listed in the *National Formulary* Physicians ordinarily consider that there is some special virtue in prepared calamine Few know when writing for calamine and zinc oxide in this formula that they are repeating the zinc oxide because prepared calamine is zinc oxide tinted with ferric oxide. Once the books described calamine as calcined zinc carbonate, which meant in reality zinc oxide, for the calcine process drove off the carbonate in the form of gaseous carbon dioxide Some physicians (and not a few dermatologists) seek to disguise the pinkish color of prepared calamine They order the lotion with the addition of sulfonated bitumen First, they make the zinc oxide pink by ordering prepared calamine, and then the pink is changed to brown Another factor must be recalled few patients appear for care of the skin who have not already attempted to obtain relief by applications of the "pink lotion"

### Sulfur

The next ingredient we consider in slightly more detail is sulfur Unless the doctor orders specifically, the pharmacist has the choice of (1) sulfur that has been washed free of ammonia water until it no longer imparts a blue color to red litmus paper (sulfur lotum or washed sulfur), (2) sulfur that added to water

# THE PRESCRIPTION FOR THE SKIN

HERMAN GOODMAN, M D, New York City

SINCE 1898, in New York State, the examination for medical practice has not included tests on pharmacy or prescription writing. The medical colleges have, therefore, not stressed this important phase of medicine. An entire generation of physicians has not been trained to write any prescription in the old-fashioned sense. Then there is a steady increase in physical methods in treatment of skin ailments—the ultraviolet emanators, the x-ray, short wave, grenz ray, and whatnot have displaced the written prescription on the pharmacy. Third, the improvement in cosmetics and the encroachment of the field of medicine we call dermatology instead of dermatopathology by the beauticians, barbers, and purveyors of mis-called cosmetics has made the physician dermatologist conscious of his shortcomings in prescription preparations. He hesitates to compete with the finished product of the manufacturer which lies on the counter of the pharmacy. Fourth, the large-scale pharmacy agency impresses him with the value of its products which have trade names easy to remember, and still easier to write. Fifth, we list a growing tendency for dispensing under one or another guise, as coded prescriptions, products with pharmacy labels delivered at the specialist's office to the patient, one-pharmacy prescriptions, etc.

We have neither the time nor the inclination to offer remedies for the above conditions which are economic and beyond our immediate control. We do offer an analysis of 119 prescriptions for skin patients in drugstore files during the fall of 1939. They were not selected but taken in order. The physicians were general practitioners and skin specialists.

Five prescriptions were for internal administration: mixed treatment, twice, vitamins, once, and tin oxide tablets, twice.

External applications included eight powders, forty-three liquids, and sixty-three greases. The total number of ingredients was eighty-eight. They appeared thirty-five times in the powders, 156 times in the liquids, and 187 times in the grease prescriptions.

The ingredient that appeared most often was salicylic acid, found in twenty-five prescriptions. Phenol and menthol were noted

alone or together in forty-one prescriptions. Zinc oxide was ordered for twenty prescriptions. Boric acid was prescribed fourteen times, ammoniated mercury, twelve, resorcinol, eleven, and resorcinol monoacetate (euresol), eight times. Alcohol appeared in fifteen prescriptions, aquaphor, thirteen times, rose water, thirteen, lanolin, eleven, and petrolatum, eight times. Prepared calamine was ordered eleven times, usually with zinc oxide.

Prescription blanks signed by physicians called for proprietary remedies in six instances and could be regarded as reminders rather than as orders on the pharmacist.

Sulfur was named only four times in the 119 prescriptions. There were two additional orders for lotio alba, one for Vleminkx's solution, one each for proprietary solid lotio alba, and a proprietary Kummerfeld's lotion. Sodium thiosulfate was found twice.

There were thirty-five ingredients that appeared once in the analysis. The tendency is to name the entire formula instead of writing the individual ingredients and quantities with directions for compounding. Whitfield's ointment is given as an example. Many physicians left the arithmetic to the pharmacists by prescribing a number of ounces of a percentage concentration—as ammoniated mercury, 3 per cent in ointment to an ounce.

The study of the filed prescriptions gave no inkling as to the need for specialized vehicles or for the estimated quantitative need of the individual finished prescription. No adherence to the pharmaceutical divisions of epidermic, endodermic, and diadermic ointment vehicles is noted. The greases ordered apparently disregarded such divisions. The amount of similar prescriptions was not uniform. A prescription from one physician for scalp wash would call for 2 ounces, and another doctor would order  $1\frac{1}{2}$  pint. The physicians did not restrict their prescriptions to available containers. Many ordered 100 parts which was too much for a 3-ounce and too little for a 4-ounce jar or bottle.

## Salicylic Acid

Salicylic acid is a popular ingredient in prescriptions intended for the skin. We list nineteen. The action of salicylic acid is representative of the group that Unna described as

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 8, 1940

find cheaper and perhaps better for the purpose is not an emulsion in the chemical sense and offers a better medium for the electrolytes

A formula that does not include directions but is copied and given the patient to take to the pharmacist may sometimes bring results not anticipated by the original prescriber. A formula in the collection called for olive oil and lime water. Unless so directed some pharmacist would not take the time to form an emulsion. Modernization of this formula would result in forming a soap of the carbon tetrachloride ingredient with the synthetic emulsifiers, such as triethanolamine or mixed propylamines.

The vehicle may be of greater importance than the ingredients that are included for their activity on the skin and its lesions. It is a theory that deserves further study that the skin should be regarded as an emulsion and that it may be either a water-in-oil or an oil-in-water emulsion. If the application ordered on prescription or bought over the counter as a

corrective or decorative cosmetic is in the same phase as the skin at the time of application, there is no damage done. But, if it should so happen—and trial and error is the only clue to date—that the application is in the opposite emulsion phase from the skin, we have further difficulties. One example alone must suffice. The patient who is ordered to stop applying soap and water is in effect ordered to stop the application of an oil-in-water emulsion. If, contrariwise, he is given a lanolin vehicle, he is told to apply what is, in effect, a water-in-oil emulsion. Patients who do not do well with soap and water are conventionally told to apply the grease. That is change of phase. Contrariwise, the patient who does not improve with our lanolin greases is directed to apply starch boiled in water which acts as an outer water phase.

Proprietary cosmetic and pharmaceutical preparations for the skin may be either one or the other phase if fat and fatlike ingredients are included in their manufacture.

#### NEW YORK PHYSICIANS ART CLUB

The fourteenth annual exhibition of the New York Physicians Art Club will open April 26, for one week, at 6 East 57th Street, under the auspices and for the benefit of the British War Relief Society, Medical Aid Department. This is the first time that the Physicians Art Club has given its exhibition as a benefit and it is expected that the worthy cause will be a factor in greater participation than ever by members and visitors. On the opening night there will be a reception with addresses by prominent speakers, Scottish pipers, collation, and a preview for the press and invited guests. Pictures and other exhibits marked for donation will be sold at auction on last nights of the exhibition for benefit of the British War Relief. Works previously exhibited may be submitted and the usual limitation to four has been waived.

PERCY FRIDENBERG, M.D., Secretary-Treasurer

#### CORPSE'S YELL HALTS STUDENT

When a medical student at the Anatomical Institute of the University of Mexico City touched the chest of a supposed dead man with the dissecting knife, the "corpse" sat up and yelled, "You fool, you are hurting me."

The student almost collapsed as his subject said that he was a farmer and that the last he remembered was drinking to celebrate a friend's birthday anniversary. He fell in the street and as he showed no life at a hospital he was taken to the morgue where he was left 72 hours. Still covered with a canvas he was taken to the Institute for dissecting. The revived "corpse" walked unsteadily to an adjoining hospital.

The student, suffering from a severe attack of nerves, had to be carried to the hospital on a stretcher.

—Canadian Doctor

#### CANTO

The melancholy days have come,  
The dizzy, busy season,  
With meetings scheduled every night  
Till we're bereft of reason.  
"The perineum's bulging now,"  
The nurse keeps on repeating  
"I'll try to get the doctor, but  
I fear he's at a meeting."  
The patient writhes in agony,  
But soon she'll suffer less, sir,  
For Doc is learning what to do  
From hearing a professor!—

Exchange, quoted in *Westchester Medical Bulletin*

#### BY THE LATE RETURNS

Seen by G. S. E. in the Sunbury (Pa.) Medical Society News

The famous two of Draft Board examiners, Drs. Wilkenson, Wentzel, and Solomon, carefully inspected 28 men recently in Sunbury. The clerk reported that 12 draftees had enuresis. This seemed terribly high so they asked about it. The printed question was "Did you wet the bed since childhood?"—When asked the reason for answering "Yes," they answered, "We are Pennsylvania Dutch. We thought you said, 'Did you WENT to bed since childhood?'"

J.A.M.A.

and filtered has a filtrate neutral to acid or alkali litmus (sulfur praecipitatum or precipitated sulfur), and (3) sulfur with sulfuric acid which reddens litmus and may be present in such quantities as to cake (sulfur sublimatum, sublimed sulfur, or flowers of sulfur)

The physicians in many instances merely wrote the short or popular name for the sulfur preparation he thought he ordered for his patient. We find *lotio alba*, *Vlemmickx's solution*, and *Kummerfeld's lotion*. The conventional white lotion (*alba lotion*) has been studied quantitatively, and according to these studies the active ingredient is released hydrogen sulfide. The directions in the *National Formulary* call for shaking the mixture of solutions of zinc sulfate and potassa sulfurata before corking. The active ingredient is released in the face of the pharmacist who prepares it freshly according to official directions. But the transfer of the final product from a store jar to a patient's bottle is attended with practically complete loss of the active ingredient.

A commercial variant of white lotion is a solid prepared by mixing 100 per cent solutions of zinc sulfate and potassa sulfurata. The precipitate catches and holds in physical union a small quantity of the liberated hydrogen sulfide gas evolved by the interaction.

Formula for *Vlemmickx's solution* is found in the *National Formulary*—*liquor calcis sulfuratae*. Neither the *United States Pharmacopoeia*, the *National Formulary*, nor the *Dispensatory* carries any formula for *Kummerfeld's lotion*. The pharmacist has his choice of no less than three formulas calling for combinations of camphor, sulfur, in tragacanth or acacia suspensions. A blank calling for *unguentum sulfur*, 40 per cent, is in the collection. It is difficult to understand what the physician wished the patient to secure. There is no ointment of this nature in the official *Dispensatory*. The pharmacist either must call the prescriber or use his own judgment. In either instance it appears to us that the order is far from good prescription writing from the standpoint of the pharmacology or dermatopathology.

A few prescriptions called for sodium thiosulfate for external application. The chemistry of sodium thiosulfate in relation to skin therapy is complex. The activity depends upon the chemical reaction of the part to which it is applied. The acidity or alkalinity of the mediums is of utmost importance. The salt requires solution for its ionization. Prescribed in a powder would defeat this, unless

the part to which it was applied was moist. The presence of other agents add to the difficulties of analysis of reaction. Furthermore, the concentration—2 per cent—is low for measurable effect. By and large, sodium thiosulfate is best prescribed alone.

The influence of a pharmaceutical house with a good product and an educational director is evident. Six of the eight in the series of prescriptions no doubt inspired call for the active product by its trade name.

Resorcinol monoacetate available under that name is considered by many not to be the exact counterpart of the euresol and certainly not the equivalent of the perfumed euresol. There is a great difference in price, and some, not overethical pharmacists have been said to substitute the nontrade-marked variety upon calls for the euresol.

### Grease Vehicles

It is not impossible from the text of any prescription intended for skin application to learn or guess what vehicle should have been ordered. Examination of the prescriptions did not help. One prescriber asked for "bland base." Did he seek action on the surface of the cutaneous covering—a form of epidermic vehicle—hence, mineral fat and fatlike products? Did he seek action in the skin—a form of endodermic vehicle—hence, some form of animal fat or fatlike product? We assume that he did not seek action through the skin for which he would have required a form of dermic vehicle. But the pharmacist has no means of knowing—the prescription should not give him a choice. Bland base might mean anything in the realm of greases. The one selected by the pharmacist might not be the one that gives the patient the result desired. The wrong choice of vehicle might make matters worse instead of better. An order for one mixture of lanolin and white petrolatum indicated that the prescriber recognized one difficulty of lanolin greases—they do not spread easily. *Aquaphor* which was ordered in thirteen prescriptions, has the ability to take up many times its weight of water.

The practicability of a prescription including rose-water ointment depends entirely upon the type the pharmacist places into the product. It is entirely possible that an official *Unguentum Aqua Rosae*, U S P—a perfect emulsion—will be quite unsuitable with electrolytes, particularly on agitation, since the emulsion will break. A rose-water ointment that is not official but that many pharmacists

throughout the year Obviously, many of the exposures are of short duration, at infrequent intervals, and involve only 1 individual On the other hand, 1 individual may be exposed to many compounds in a relatively short period of time, complicating the situation, especially with regard to determining the responsible agent in a dermatitis

In our experience, dermatitis has been numerically the most important disability Here, obviously, the problem involves not the detection of the toxic effect, the dermatitis, but the identification of the offending agent and its mode of action so that suitable preventive measures may be adopted Many of these substances that can cause dermatitis may be classified as to the type of effect, whether mechanical, desiccating, hydrolytic, lipid solvent, detergent, protein precipitant, etc An increasing and considerable number of these organic compounds act as cutaneous sensitizers or allergens Over 90 per cent of our cases of dermatitis due to organic chemicals fall in this category of sensitization dermatitis, and the compounds responsible are extremely varied as to structure and chemical activity This concept of cutaneous sensitization or allergy is an extremely important one and is a difficult subject to explain to the layman We feel that a partial understanding of the nature of sensitization by the individuals exposed is essential if their intelligent cooperation is to be had They must appreciate that the greater the contact with certain substances the more likely the sensitization and, subsequently, the dermatitis, and since the sensitizing process usually occurs without obvious pathologic signs it is necessary to have as complete limitation of contact as possible in order to minimize it

The patch test has been an invaluable aid in indicating the responsible agents in many cases of dermatitis With new compounds there is always the difficulty of determining a proper concentration of the test material which is not a primary irritant, and for this purpose the guinea pig, with a fairly comparable skin reaction to that of the human, has been a quite satisfactory test animal Caution must be observed in choosing the proper concentration, for it is possible to sensitize an individual to the test material even when no previous sensitivity existed Patch testing to determine whether or not there is a pre-existing sensitivity before exposure and to eliminate sensitive individuals is, in our experience, of little value Where the exposure is to a particular substance peculiar to a special trade

such a procedure might be justified, but where the exposure is to a number of substances, of varied allergenic potency, the variables in the problem and the relative ease with which sensitization can occur to some compounds minimize the value of pre-exposure testing We know of no method for determining the tendency of the skin of a particular individual to become sensitized Neither do we place a great deal of emphasis on the complexion type While it is agreed that in general the skin of brunettes is more resistant to primary irritants than that of blonde and red-haired persons, we have not been able to correlate any complexion characteristic with increased susceptibility to sensitization

A slightly different attack on the problem has shown promise of being useful It is based on the principle that all substances vary with respect to their tendency to cause sensitization and that these quantitative differences can be determined, at least roughly Frequently, in a manufacturing process where dermatitis has been a problem, the offending agent can be substituted The change may involve considerable expense, and the new compounds may be untried as to their effect on skin. A technique has been developed for determining the relative allergenic potencies of organic compounds, using guinea pigs as test animals The method, applied to substances with which a considerable human experience has been acquired, gave a remarkably good correlation between the incident human and guinea-pig dermatitis The results of these experimental studies, begun with the collaboration of Dr Henry Shaw of the University of Rochester Medical School, are now being used by us to aid in the choice of chemicals for certain manufacturing processes

The detection of early toxic effects other than dermatoses to an absorbed chemical compound presents many complex and varied aspects In some instances amounts of material too small to cause any functional change for long periods of time may later cause profound disturbances Because these delayed effects are unpredictable and may occasionally be serious, we have adopted the attitude that all such accidental absorptions be kept at an absolute minimum. Frequently, it is possible to demonstrate the absorbed material in excretory products, and, unless it has been clearly demonstrated that the excess is harmless, we have insisted that the exposure be materially lessened The demonstration of these absorbed materials or of products identifying them has been of considerable

# A PROGRAM FOR DETECTING POSSIBLE TOXIC RESPONSES TO A VARIED ORGANIC CHEMICAL EXPOSURE

JAMES H. STERNER, M.D., Rochester, New York

THE variety and quantity of organic chemicals in industrial applications are expanding at an amazing rate. Many compounds that were laboratory curiosities a few years ago are now available and used in car-load lots. There is little evidence that our friends, the chemists, will declare a moratorium on new chemicals, and we can only hope that the rapid advance will not too far outdistance an adequate medical control of exposures.

The problem of preventing absorption and of detecting incipient functional and anatomic impairment in individuals exposed to many chemical substances presents difficulties. While there has been a constant improvement of our medical tests in the direction of greater accuracy and finer definition, we are well aware that there are relatively few means of indicating with certainty the earlier functional changes and slight anatomic injuries which are the precursors of the more serious and often irreversible pathologic states. Ideally, all exposures would be so controlled that there would be no absorption of harmful substances, but practically this is an impossible goal and fortunately not an essential one for the well-being of the individuals exposed. The human organism is equipped with a variety of mechanisms for detoxifying harmful substances, and there is a level at which these processes can function without evidence of serious disturbance to the body. Many of them are constantly handling "toxic" products of normal metabolism, and in this sense "detoxication" is a normal physiologic function—not a pathologic one. If the limits of these processes could be determined and correlated with the factors of exposure, the maximal exposure consistent with health, at least for most substances, could be defined. Both conditions present many variables that greatly complicate the problem, but with many chemical compounds information is available that makes possible and practical the safe control of exposures.

The methods of attack are necessarily varied. The most unfortunate and costly approach is through the sequence of definite

injury, first defining the levels of exposure which are harmful with the subsequent decrease of exposure to a level consistent with health. However, through these inadvertent instances much valuable information has been gained, suggesting methods for detecting earlier signs of injurious absorption. These methods include the determination of slight and reversible changes in some physiologic function, such as variations in the size and hemoglobin content of the erythrocyte or the number and type of leukocytes or the change in a detoxication mechanism such as the urine sulfate partition. In other instances the level of excretion of the absorbed substance, such as lead or mercury, may indicate impending danger. Still other warning signs may be found in small amounts of pathologic pigments, such as methemoglobin or carbon monoxyhemoglobin, and in the excretion of porphyrins or urobilinogen.

In the case of the absorption of certain substances, the sequence of events beginning with the identification of the substance in the urine in excess amount or of slight functional changes and progressing to severe and irreversible anatomic injury has been quite clearly described. The finding of these earlier signs following the absorption of other substances does not permit the unequivocal conclusion that the more severe later effects will necessarily follow, but the proving of the point may be most unfortunate. A wiser course is to accept these early signs as friendly warnings and to reduce the degree of absorption. Animal experimentation is a valuable, but not infallible, guide in indicating these relationships and merits an increasing application to the study of new chemicals.

The following instances based on an experience with a program to control exposures to a variety of organic compounds illustrate some of the problems of detecting absorption and early toxic responses. The number of organic chemicals involved is some ten to twelve thousand—including the intermediates encountered in the syntheses. The amounts vary from a few milligrams to many thousands of pounds, the number of individuals exposed to a particular compound varies from one to several hundred, the time varies from a few seconds to continuous eight hours a day.

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From the Laboratory of Industrial Medicine, Medical Department, Eastman Kodak Company.

lower leukocyte values. Counts below 5,000 are frequently found in individuals with no appreciable exposure and no evidence of pathology. Similarly, lymphocyte percentages above 35 are a common finding and, we believe, well within the normal limits. Other examples might be cited as showing the need of revising our concepts of what constitutes the range of "normal" values, or at least the values found in a cross section of the employed population.

At first the sedimentation rate appeared to be a useful test for detecting certain absorptions. Subsequent studies revealed a variability with age which we had not appreciated and which, it seems to us, requires a compensating factor for age whenever the results of this test are considered. When we had divided our controls into ten-year age groups, beginning with the class through age 24 and ending with the class 55 to 64, we noted a consistent and appreciable increase in the higher rates with an increase in age. While this might be expected, the degree of the change was surprising. The percentage of cases (of the total in that particular age group) with an uncorrected sedimentation rate of 10 mm or less at one hour (Wintrobe tube, heparinized blood) is shown by age groups in Table 1. Obviously, if this test is applied to groups of mixed ages, suitable adjustment must be made for age or for some factor varying with age.

A variety of special tests are finding increasing application in the control of absorption in industrial exposures. Some depend upon the determination of the absorbed substance in excretory products, especially the urine. A well-known example is the determination of lead in the urine following exposures to that compound. In the case of organometallic compounds, the excretion level of the metal fraction (as the lead in tetraethyl lead absorption) may be the only or the most easily identifiable product to indicate the absorption. It does not follow that the level of excretion of the metal following the absorption of the organometallic compound has the same significance as that following the absorption of the metal as an inorganic form. Recent experience with the absorption of an organic selenium compound and the determination of the selenium fraction in the urine as a measure of the absorption has clearly demonstrated the value of this type of test. Had we merely been content with controlling the amount of selenium in the air, we would have missed a considerable absorption through the skin. In fact the particular compound penetrated

TABLE 1

Years	Through 24	25-34	35-44	45-54	55-64	Total All Ages (18-65)
Percentage of total cases in each age group with rate of 10mm or less	93	73	49	46	28	63

readily through rubber gloves and boots with which we thought we were protecting the individual. By means of serial samples of urine we can tell almost to the exact hour the time of a contact resulting in absorption. The cumulative graphed data on the excretion shown to the individual exposed, and to supervision, have been of considerable value in securing their cooperation in eliminating the sources of the absorption.

A useful control procedure in the case of exposure to certain dyes or intermediate compounds that can be converted into colored substances is illustrated by the method for the detection in urine of absorbed benzidine reported by Kuchenbecker.<sup>4</sup> Here the urine suspected of containing the benzidine is diazotized and then coupled with another organic chemical to give a characteristic dye, which in turn will dye bits of suitable fabric added to the solution. The test can be made roughly quantitative. Many modifications are possible in identifying other similar chemicals, such as extraction and concentration of the material from dilute state in the urine and the addition of a diazotized compound to a urine containing an absorbed chemical which will couple to give a colored solution. There are many tricks that we can borrow from the dye chemists to aid in identifying these substances in the urine. With the demonstration of the absorption of compounds of this type, we have insisted on more efficient preventive measures. The delayed carcinogenic action on the mucosa of the bladder of certain substances has dictated such a rigid control.

The method in which a quantitative change in a detoxication mechanism follows increasing absorption of certain substances is illustrated by the urinary inorganic-total sulfate ratio change following the absorption of benzene. While the limitations of this test as a measure for controlling exposures to benzene are still controversial, we have found it to give useful information, especially where the concentrations of vapors are quite variable. In organic syntheses benzene is a useful

value in impressing upon supervision and the individuals exposed the desirability of more exacting control of exposures. If the presence of these absorbed compounds coincides with early evidence of toxicity, the control procedures then become imperative. A few of the specific methods that have been found useful will later be mentioned in some detail.

Several years ago we began to apply a broader base of common laboratory procedures in our studies of individuals exposed to potentially toxic materials primarily in the hope that we would be able to "screen out" certain evidences of toxicity if they existed and which, because they were not predictable, we might otherwise miss. Each individual had the following tests: hemoglobin, erythrocyte count, hematocrit, leukocyte count, Schilling index, filament-nonfilament ratios, reticulocyte count, icteric index, and sedimentation rate. From this data were calculated the mean corpuscular hemoglobin, mean corpuscular volume, and mean corpuscular hemoglobin concentration. Many additional studies were done on individuals without any significant exposure to build up a large reference control group. Physical examinations, histories, and stereograms of the chest were also completed. In many instances special tests were performed as indicated by the specific exposure, and all data were correlated with environmental studies, such as air analyses, and examination of protective equipment, such as gloves and boots, for evidence of exposure. Animal studies in certain cases were a valuable adjunct. The results obtained from the application of the more common laboratory tests have, in many respects, been quite illuminating. They have shown the necessity of obtaining the norms for these procedures from the same class of individuals as those being studied for the effects of special exposures. Particularly have they emphasized the variability of values—first, in the methods themselves and, second, as obtained in samples of representative workmen. Our data have not attempted to define the absolute limits of "normal" in the sense that "normal" means an optimum of health, but rather represent a cross section of employees who exhibit variable degrees of foci of infection in teeth, tonsils, and prostate, and other minor nondisabling conditions expected in such a group. We intend to present in the near future the complete studies on some 500 men but wish to point out here one or two of the more interesting observations.

The application of statistical methods in

dealing with the data from groups larger than 20 has been very useful. Recently, Greenburg and his co-workers<sup>1</sup> have shown that an increase in the mean corpuscular volume (and judging from their data, the mean corpuscular hemoglobin, although they did not stress this factor) is one of the most significant early hematologic changes resulting from exposure to benzene (benzol). It is interesting that we have found similar significant increases in these indices in certain exposures to butyl alcohol and gasoline, suggesting that this finding may have even wider application. No other abnormal laboratory findings were observed in these groups with the increased MCV and MCH, except a slightly elevated reticulocyte count. Most of the hemoglobin and erythrocyte counts were within the limits that we have come to accept as "normal." The significance of this change in the amount of hemoglobin per erythrocyte and the volume of the individual erythrocyte is not certain. We have taken the conservative (though perhaps needlessly stringent) attitude that these findings, even in the absence of any other sign, predicate a more rigid control of the exposure. Caution must be observed in placing too much value on a single or few isolated variations of these values. The considerable variability of such common laboratory tests as the hemoglobin determination and cell counts is not generally recognized, and the careful standardization of methods must be scrupulously done. We feel that the range of "normals" reported by Wintrobe<sup>2</sup> and usually cited in textbooks is not broad enough for industrial groups such as ours. The range of values (white men, aged 18 to 65) including 95 per cent of all cases (excluding groups that varied significantly) are mean corpuscular hemoglobin, 25 to 33 (Wintrobe—27 to 32), mean corpuscular volume, 76 to 101 (Wintrobe—80 to 94). There is no appreciable variation with age (from 18 to 65) of these indices.

There is considerable controversy concerning the significance of leukocyte counts and differential counts. There is a much greater variability in the method than is generally appreciated. Thus, Berkson, *et al.*,<sup>3</sup> have shown that with the usual technique of counting 4 sq mm (one pipet, one side of the counting chamber), even though the equipment is all carefully standardized and the test accurately performed, such a count is determined significantly only within  $\pm 21$  per cent. As larger groups of individuals without special exposures are reported, the limits of "normal" are extended, especially has this been true of

out, it is a difficult problem to detect impairment before the development of advanced degrees of pathologic change

For a long time the use of threshold values has been employed by engineers and others interested in the control of toxic substances in industry, and, as Dr Sterner points out, such levels do not preclude the possibility of poisoning in susceptible individuals

The conjugation of substances in the body and their excretion in the urine are protective measures that may be utilized for the purpose of detection and prevention, and the patch test is of

tremendous value in the field of dermatitis prevention. A still more valuable indication is the slight but consistent changes in the blood which may be detected in workers exposed to small amounts of toxic materials. It may very well be that some time in the future we will have a still more sensitive index.

There still remains a real need for a sensitive index of early physiologic changes prior to the advent of disease.

Dr Sterner's paper has presented a clear and lucid discussion of this important problem.

### ALUMNI DAY—NEW YORK UNIVERSITY COLLEGE OF MEDICINE

Alumni Day is Saturday, March 22. The dinner will be Friday night, March 21, at the Roosevelt Hotel. Speakers include Chancellor Chase, Dr James R. Angell, and Somerset Maugham. Send your reservation to 100 Washington Square East, New York City.

The program for the Sixth Annual Alumni Day—March 22—is as follows:

- 10 00 A.M. Greetings to the Alumni  
Luther B. MacKenzie, '04, President, Alumni Association
- 10 10 Today's Program  
Arthur M. Wright, Chairman, Committee on Science and Education
- 10 15 The Relation of the School and the Hospital to the Development of Clinical Teaching  
Claude E. Heaton, '21, Assistant Clinical Professor of Obstetrics and Gynecology
- 10 35 Is There a Surgical Solution for Hypersensitivity of the Carotid Sinus?  
John H. Mulholland, '25, Assistant Clinical Professor of Surgery
- 10 55 An Approach to the Problem of Management Presented by the Patient in Coma  
Emery A. Rovenstine, Professor of Anesthesia
- 11 15 What Is the Present Status of the Shock Treatment in Schizophrenia?  
Karl M. Bowman, Professor of Psychiatry
- 11 35 The Diet of the Infant in the Early Months  
Charles Hendee Smith, Professor of Pediatrics

- 11 55 Surgical Personalities of the Past  
Arthur M. Wright, the George David Stewart Professor of Surgery

Luncheon will be served at 12 30 P.M. in the Wyckoff Memorial Lounge, 338 East 26th Street at First Avenue—Luncheon Tickets, \$1.00 per person. Speakers will be Dean Emeritus Samuel A. Brown, '94, Dean Currier McEwen, '26, and Nathan B. Van Etten, '90, President, American Medical Association.

The afternoon program is as follows:

- 3 00 P.M. The Development of the Pre-Clinical Departments at the Medical College  
George B. Wallace, Professor of Pharmacology
- 3 20 The Rehabilitation of the Patient Subsequent to Myocardial Infarction  
Clarence E. de la Chapelle, '22, Professor of Clinical Medicine
- 3 40 The Preparation of Human Hemoglobin as a Possible Blood Substitute  
R. Keith Cannan, Professor of Chemistry
- 4 00 The Role of Specific Antipneumococcus Immunity in Patients with Pneumonia Treated with Sulfonamide Compounds  
William S. Tillett, Professor of Medicine
- 4 20 What Is the Basis for Rational Endocrine Therapy in Gynecological Conditions?  
Howard C. Taylor, Jr., Associate Professor of Obstetrics and Gynecology
- 5 00 Social Hour with Dean McEwen—Dean's Office

There will be demonstrations and exhibits during the morning and afternoon.

### SHAKE!

Patient (in operating room) "Doctor, I am very nervous. This is my second operation."  
Doctor "What have you got to be nervous about? This is my first"—*Medical Record*

### A CRASH OR A CRUSH

Some have said, 'The fellows who drive with one hand are generally headed for the aisle of a church. Some of them will walk down it and some will be carried.'

solvent, and the variations of handling it make difficult a uniform control method. Changes in sulfate ratios have aided materially in pointing to unsuspected breaks in protection against absorption of benzene.

We have been quite interested in the excretion of porphyrins as a means of determining the toxic effects of certain substances. The apparent complexity of the whole problem involving the chemistry and the metabolism of these pigments is sufficient to discourage most people who might have an interest in them. However, the accumulating data indicating an abnormal porphyrin excretion after administration of lead, arsenic, mercury, and sulfanilamide and, more recently, the finding of excessive amounts in the urines of chemical workers<sup>5</sup> suggest that there may be considerable value in studying the excretion of these substances. The excellent article by Watson<sup>6</sup> is to be recommended highly to those interested in the problem. He points out that a ready method for distinguishing type III porphyrins (found in quantity in the urine chiefly in certain toxic syndromes) from type I (normally present in small amounts in urine) will add greatly to the usefulness of the procedure. Most of the studies reported have been done on twenty-four-hour or larger samples. We have noted considerable variation in the porphyrin content, both on a per hour and a per sample basis, in individual samples of urine before and after moderate exposures to organic amines but the cases are too few to be more than suggestive. Much work must be done on determining the limits of normal excretion under varying conditions of diet, exercise, etc. The correlation of the porphyrin data with that of the hemoglobin, erythrocyte, and reticulocyte values and the excretion rates of urobilinogen in urine and feces will permit a much more accurate picture of the hematologic state and the factors affecting it. While a great deal must be done to make the methods available for clinical application, we feel that the future importance of this approach is of sufficient promise to warrant stressing.

Other special techniques that have been of value under certain conditions will not be discussed here. However, there is a fertile field in industrial toxicology for the development of these techniques. They are far from being of mere academic interest, and we have found them of great value in indicating accidental absorptions and in helping to persuade both workmen and supervision of the necessity for better protective measures.

In approaching the problem of controlling exposures involving new and untried chemical compounds, one must consider the absorption of the substances as harmful until there is abundant evidence to prove otherwise. The role of the skin as a portal of entry deserves more attention than is generally given it. Since in many instances we cannot surely anticipate evidences of absorption and early toxicity, we have included in our physical control a variety of common laboratory tests, hoping to "screen out" any early abnormalities. Signs of injury to liver, blood, and kidney can be detected at fairly early stages, and we believe that where the statistical analysis can be applied abnormal changes can be detected in a group before any of the individual values have appreciably exceeded the "normal" limits.

### Summary

Some of the experiences gained in the study of exposures to some ten to twelve thousand different organic chemicals are related.

1 Dermatitis, chiefly of the sensitization type, has been numerically the most important disability. The patch test and pre-exposure testing are discussed.

2 Methods for detecting absorbed compounds in excretory products and for determining early evidences of toxic effects are considered. The necessity of preventing such absorption is stressed.

3 A "screening" application of a number of common laboratory procedures when the exact type of toxic effect cannot be anticipated is discussed, and some facts are presented as to variations of these values in certain exposures and as to ranges of normal values.

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### Discussion

Dr Leonard Greenburg, New York City—Dr Sterner has presented a very interesting and succinct discussion of the important approaches leading up to the detection of incipient functional impairment in animals exposed to the absorption of toxic agents. As he so well points

Most of these will take care of themselves, but all are potentially dangerous. Whenever there is any question of a foreign body—metal, wood, or dirt—these wounds should be incised, explored, cleaned out, and left open. The giving of tetanus antitoxin is a decision for the individual doctor. Unfortunately, its use has become almost a ritual which, however, is losing its importance as are most rituals. Personally, my faith in it has steadily diminished over the years, and I practically never use it. I believe I have seen more harm from the use of tetanus antitoxin than good.

Lacerations of the skin and less important soft parts call for cleansing of various degrees. Restraint of our perfectionist attitude is the most important factor in their management, it is difficult to control our desire to attain a nice looking wound. Sutures add trauma, and a perfect closure may be the determining factor in allowing the development of infection in a wound that would have remained clean if left open or, at most, only approximated by a stitch or two. Closure can be made with impunity after a few days—if anything is to be gained by it. The removal of known devitalized tissue is good surgery, but the carrying of this procedure to the degree deemed necessary for use of the term “debridement and closure” may be bad surgery. Our human perceptions are rarely fine enough to keep us from adding insult to injury.

Wounds involving injury to tendons and/or nerves must be carefully judged as to their fitness for care in the office. Extensive search for a retracted proximal tendon usually requires more of an operative setup than is available. In general, if these injuries are seen at once, or within a few hours, and are capably cleansed, suture may be done—preferably with fine silk and certainly with meticulous gentleness. Infection here is particularly the black beast to be avoided. When in doubt I prefer to leave these wounds open, bathing them in normal saline or Ringer's solution for several days and closing them only when I am sure there is no infection. If more than several hours have elapsed and the wound is badly soiled, I believe it is safer to avoid the additional trauma of repair until the question of infection is settled.

Wounds in which there has been removal of areas of skin should be cleaned, and skin grafts should be applied at once—as soon as feasible if infected. The grafts are covered with gauze saturated in saline solution. Dressing is done after three or four days. The grafts will have taken in forty-eight hours if they are

going to take. When grafts are to be applied to an infected or granulating surface, they are cut into pieces about  $\frac{1}{4}$  by  $\frac{1}{4}$  inch. I prefer grafts cut in strips, practically full thickness in the middle and thin as Thiersch grafts at the edges; these are easily cut along the raised surface of the novocain infiltrated skin with a sharp scalpel. The areas left are treated with tannic acid and silver nitrate.

Most dislocations may be successfully reduced in the office. A dose of morphine—adapted to the size of the individual—followed, after time for action, by slow careful manipulation will usually accomplish the desired reduction. Fractures of the bones of the hands or feet are usually amenable to treatment. The relaxation obtained by the action of novocain in these cases makes reduction easier. Maintenance of reduction is the same problem in the office as in the hospital. In general, avoid the use of casts or splints wherever possible. To apply a cast over an undisplaced fracture of the fibula or metatarsals is unnecessary. The mere presence of a crack in the bone, as shown by x-ray, is too often interpreted as an indication for prolonged fixation. Patients with fractured metatarsals properly reduced will get about surprisingly soon if not prevented by a cast.

The injection with novocain of so-called sprains gives immediate comfort to patients. This may tempt them to too great activity and much pain several hours later. It does not allow the return to active work. It cannot take the place of time and rest in the repair of trauma.

I hesitate to take up the subject of back strain. In my opinion there is no other subject in such a mess with regard to diagnosis and treatment. A given case of low back pain can go the rounds and be labeled with as many different diagnoses and suggestions for treatment as representatives of groups of thought and training. In the experience of the insurance companies none of these conclusions is much more accurate than a diagnosis arrived at by shaking dice. The representatives of each group are as sure of themselves—to hear them tell it—as an economist, whether old or New Deal. I believe that most back cases represent muscle strain or tear and that the most important factor in treatment is rest until such time as objective symptoms disappear. Whether or not a patient can be satisfactorily rested at home depends upon the intelligence of the patient as well as his economic situation. If there is no improvement after a week's rest, either the patient is not resting or he is exag-

# THE OFFICE TREATMENT OF INDUSTRIAL ACCIDENTS

HOWARD L. PRINCE, M D , Rochester, New York

THE office treatment of industrial trauma must be influenced by the facilities at hand and the amount of dislocation of office routine a given case may produce. Any discussion of office treatment must consider, first, the benefit to the patient and, second, the benefit to the doctor.

The more immediate the care of trauma the more certain it is to be successful. The chances of cleaning up an infected wound or preventing infection in a contaminated wound fade with the minutes. Office hours usually cannot be interrupted to rush to a hospital and, anyway, why rush to a hospital? In any busy hospital there is a lag of about one hour under the best of circumstances, and usually the operating facilities are tied up for several hours—not to be interfered with except for emergencies. A soiled, lacerated wound is seldom considered an emergency. Delay in cleaning up a wound may cost the use of a hand or it may be of vastly greater importance than delay in removing the appendix or gall-bladder already booked. In an office the condition can be cared for in less than the time required to get well under way in a hospital and without too much interference with office routine.

To accomplish this the office must have sufficient space and enough help so that the case in question will not tie up the facilities for the care of nonindustrial patients. I am considering the problem from the point of view of the doctor in whose practice industrial trauma does not play a major part. We do a good many operative procedures in our office because it saves our time and saves expense for the patient.

We have sterilized syringes and various-sized sterilized needles. A sterile  $1\frac{1}{2}$  per cent solution of novocain in 1-100,000 epinephrine is kept in rubber-topped bottles ready for use. Sterile dressings are on hand. Knives and scissors are kept in sterile solutions after careful washing between uses. Instruments are boiled as needed.

The patient is examined to decide whether or not the condition can be taken care of in the office and what should be done. A small area outside the wound is cleaned and prepared for injection of novocain, from this or additional

areas the injections necessary to anesthetize the traumatized parts are made. We then get on about our business for fifteen or twenty minutes. By this time anesthesia is complete and attention to the toilet of the traumatized part is in order. Whether soap and water scrubbing or chemical sterilization is the method of choice is immaterial—either can be done leisurely and with due consideration for the tissue involved. In general, no antiseptics alone is as certain as soap and water scrubbing. In a deeply lacerated wound with extremely dirty skin around it, it may be advantageous to pack the wound with vaseline gauze while the surrounding skin is being scrubbed. Dry, sterilized gloves are put on for the cleansing and for the reparative procedure. When finished and dressed, the patient is given several tablets of codeine or morphine for use for pain, and he is instructed about resting the injured part. We are too prone to forget that rest of a wounded part is a most important assistance in the avoidance or overcoming of infection. Many severe hand infections result from too early use. The use of practical splinting to protect wounded parts from motion is of great importance.

If infection is feared, the patient is asked to return the next day, if not, the patient reports as to his feelings at the end of twenty-four hours, and, if the report sounds all right, the return may be postponed for as long as seems desirable. Most wounds are dressed too often. The main reason back of many dressings is the doctor's curiosity. Wounds in which infection is developing give symptoms of which pain is the chief one. Dressing of the symptomless wound before healing time has elapsed accomplishes nothing except pain for the patient, and every dressing done before healing adds a chance for infection. Assiduous pulling down of dressings is less a mark of a careful doctor than of an uncertain doctor who lacks a proper conception of the healing processes. A comfortable trauma—whether of bone or soft parts—is seldom aided by the glance of the medical eye. On the other hand, any complaint of pain increasing or developing after a period of comfort calls for thoughtful consideration.

Among the commonest industrial traumas coming to the office are puncture wounds

office equipment, reduction of many fractures under local anesthesia may be added to the list, thereby overcoming a delay of several hours.

I am at variance with the speaker on the point of tetanus antitoxin, I feel it is our duty to give them tetanus antitoxin. A test should be given as to sensitiveness.

I believe that patients presenting soiled, open wounds, deep puncture wounds, and particularly wounds that have been sustained out-of-doors should, whether they have been debrided or not, receive tetanus antitoxin.

It is undoubtedly true that the use of tetanus antitoxin has become almost a ritual, but I have seen tetanus develop in one of my own patients who sustained a lacerated finger in the gears of a machine inside a factory. It had been a routine procedure at that time to administer tetanus antitoxin, and I believed that this patient had received it. On the ninth day following the injury he developed abdominal and neck rigidity and the characteristic facial muscle contractions. It was only when going through the records in the accident room of the hospital that I ascertained that the patient had not been given the prophylactic injection. Only the delayed onset and the employment of several hundred thousand units of antitoxin administered intravenously, intraspinaly, and intramuscularly saved the life of this patient.

Pyogenic infection superimposed in a wound is another factor that adds to the period of disability.

Dr Prince has emphasized the importance of thorough debridement and avoidance of tight closure of the wound. I think we are all in agreement with that procedure.

There are no doubt some physicians who have unnecessarily hospitalized patients for the aforementioned minor injuries, thereby delaying their treatment. It was undoubtedly early observation of this needless delay that influenced Dr Prince to carry out the practice and arrive at the conclusions he has so ably presented.

Dr James M. Hitzrot, *New York City*—I know office treatment in traumatic surgery can be done by the men who will take the trouble to do it.

Living in New York City, I feel that tetanus antitoxin has a place in the treatment of wounds. I agree with Dr Prince that every wound that comes in should not receive tetanus antitoxin. The question requires some thought. I personally have a strange fear in giving tetanus

antitoxin to every patient. However, I do not feel that it should not be given at all.

Where a physician is doing a great deal of industrial work, he probably has the necessary office equipment and certainly can save time for the patient and the doctor.

Dr Prince has brought to our notice a rather important subject, and it would be difficult to disagree with him.

I am particularly happy to hear him say that the treatment of an injury should be immediate, that soap and water are the best cleansing agents, and that local rest is an essential adjunct of wound treatment. General lassitude and rest are on the preferred payment list of our government agencies, perhaps we can get them interested in local rest.

He has raised so many essential points that I would have to write a paper to cover all the points he has raised, but may I congratulate him on one form of treatment he has used which is very valuable—namely, the use of brains.

To do office treatment properly requires proper office equipment, assistants, and the requisite training of the doctor. Without any one of the above three, office treatment, in fact any treatment, will be inadequate.

There is no reason why any properly managed hospital should not have an emergency operating room equipped to serve accident cases without any delay. Also any large industrial plant with work that has a probable hazard should, I believe, have an equipped emergency room to provide facilities for the doctor. Where neither of these are available Dr Prince's suggestion is worthy of earnest consideration.

To discuss the inadequacy of medical fees and some of the ridiculous medical schedules would carry me too far afield. Our province as I see it is to render to the patient the best that is in us and, having done that, hope, vainly perhaps, that somehow manna will fall upon us.

Dr Prince (*Concluding Remarks*)—My idea of tetanus antitoxin probably goes back to the days when I was a boy. My father was the doctor in our town. We had farm yards where everything happens to the feet, for a period of many years there was no tetanus antitoxin.

When the doctor himself will give tetanus antitoxin in all cases to his own family, then perhaps I will have more faith in it. Until someone can say tetanus antitoxin has more effect than it seems to have in recent studies, I cannot see using it.

#### GIVE HIM ONE MORE CHANCE

Doctor (after examination)—"I must tell you frankly, I don't like the looks of your husband."

Patient's wife—"Well, I admit he never was a handsome man, Doctor, but he's so good to the children."

—*Ill Med J*

#### ON LOAN

Announcement picked by a colleague from *N Y Medical Week*.

#### PAPERS OF THE EVENING

- b Management of Carcinoma of renal pelvis  
—J.A.M.A.

generating his complaints and hospital care may be indicated.

A hard bed is most effective for back rest. In severely painful cases I believe in the use of some derivative of opium to the point of relaxation for the first three or four days. The application of local heat is comforting, and adhesive strapping, properly located, is helpful. Having the patient become ambulatory to go to the office every day or two for treatment is no part of rest, and I know of no modalities at our command which justify this procedure. The case should be judged by the clinical findings rather than by x-ray study. I have an idea that office-treated back cases would do better with less x-rays and more sense. Considering the fact that the majority of laboring people over 40 show more or less so-called hypertrophic or osteoarthritic changes in the spine, why should the x-ray film assume the overwhelming importance that it has? The clinical side is the important side. A backache severe enough to produce disability should show objective signs, there should be limitation in motion and muscular spasm. Muscular spasm should be present in any position which puts strain on the injured part. When muscular spasm disappears, the individual is approaching the end of his disability regardless of how much pathology the x-ray films may show. Most of the pathology shown in x-ray films has been there for some time.

At this time an injured workman should be treated with as much consideration as would be extended his employer under similar circumstances. The desire of the employee drawing accident insurance to prolong his period of actual disability is quite generally noticeable. A certain degree of this very human reaction must be condoned in the laborer who is usually going back to much harder physical work. The getting of something for nothing is a deep-seated trait in us humans. On the other hand, we should always remain keenly aware that this trait may lead to exaggeration of discomfort and, many times, to malingerer. Also, we should not forget that many a man works at the expense of some discomfort and handicap.

I am thankful that bone and spinal canal operations are not included in office treatment. The tremendous difference in their evaluation by the advocates on one hand and the insurance companies who pay the shot on the other should arouse a suspicion that we operators are inclined to view the results prematurely or through rose-colored glasses.

From a practical standpoint the office treatment of industrial accidents carries little advantage to the doctor other than the knowledge that he has done the right thing by the patient. The use of local anesthesia is of paramount importance in handling these cases, and the anesthetists have seen to it that, while their fees are proportionately high, the use of local anesthesia by the doctor carries no reward. A comminuted fracture of a finger, calling for skeletal traction and the application of a rather complicated dressing to achieve this, usually consumes an hour of the doctor's time. An anesthetist would receive \$15 for this hour while the responsible attendant would be allowed \$20 for his hour and the ensuing three weeks of care. Care of the simplest injury in an office entails a certain amount of disorder and interference with office routine. In the more complicated cases the resultant disorder may consume considerable time. It is probably easier to send the case to the hospital and take care of it when convenient, employing a general anesthetic and the operating room. This will, of course, cost the insurance companies from \$25 up, depending upon the locality. They seem perfectly agreeable to this expenditure, and the doctor, is, perhaps, of more importance in the operating room than in his office.

277 Alexander Street

## Discussion

Dr. Ralph F. Harloe, Brooklyn—The title of Dr. Prince's paper is a popular one.

The speaker has emphasized the importance of adequate space, experienced office help, and the proper equipment for the office treatment of many patients suffering from industrial accidents.

Not only is this important in its relation to industrial accidents, but an office so arranged may save many nonindustrial patients the inconvenience and expense of hospital confinement be it one day or several days.

The number of patients admitted to hospitals for a day or more for minor operations, including such ailments as chronic paronychia, anterior-closed space infections as felons, small fibroadenomas, lipomas, cysts, etc., are numbered in the thousands. The reason may be one of several: improperly equipped offices, a neurotic patient, or it may be that in some localities of our great state where privately owned institutions are located hospitalization and administration of a general anesthetic has as its reward, a larger fee.

As Dr. Prince has emphasized, local anesthesia intelligently administered in selected cases offers advantages that we might well avail ourselves of.

If an x-ray or fluoroscopic unit is part of the

mary of a survey of the medical conditions presented by over 6,000 patients treated at the Saratoga Spa in 1936 (see Table 1) \*

Now just what does a spa offer for these convalescent cases? Florence Nightingale in 1863<sup>7</sup> said "The first necessity of a convalescent hospital is that it should not be like a hospital at all, and the very best kind of convalescent hospital would be a string of cottages. The reasons for this are (1) to get rid of the idea of being in a hospital altogether from the minds of the inmates, and to substitute for it that of a home, (2) to secure a more free and bracing atmosphere than can ever be secured in any building containing a larger number of inmates." While Florence Nightingale was not speaking of a spa for convalescent care, many of her suggestions are possible of attainment at a well-organized spa.

Many patients dislike going away for a period of convalescence because they fear that the new physician will be unfamiliar with their past history. It is of major importance that a close relationship be established between the regular attending physician and the physician at the convalescent resort. The benefit to the patient of this close relationship cannot be overestimated. A complete report from the family physician is greatly appreciated by the physician at the spa. It not only saves considerable time for the patient but also the money that might be spent for examinations duplicating those made at home. The prescribing physician at the spa should have a thorough knowledge of the patient's condition before attempting to direct his convalescent program.

The first consideration of the patient coming to the spa for convalescent care is a selection of his medical advisor. The importance of this cannot be overemphasized, since there is much misinformation among the laity in Saratoga Springs concerning the use of the treatments and the waters. Careful study of the analyses of the waters shows them to be the most important of their class to be found in any spa in the world. They should always, either at the springs or in the home, be administered on the advice of a competent physician who is familiar with the patient's condition. A satisfactory arrangement from the day of arrival at the spa is possibly half the battle in getting well. It is well to select a medical advisor even before a boarding place has been chosen. Under the prevailing conditions many of the proprietors of hotels and boardinghouses aim to please the new patient with a great abundance and variety of foods that are not at all

TABLE 1

	Primary Condition	No of Patients	Percentage
1	Heart and circulatory disorders including variations of blood pressure	1,947	30.8
2	Rheumatic conditions including arthritis, myositis, fibrositis, and neuritis	1,493	23.7
3	Gastrointestinal ailments, including liver and gallbladder	1,114	17.6
4	Nervous conditions including both functional and organic disorders	533	8.4
5	Metabolic diseases including diabetes, obesity, and glandular disorders	257	4.1
6	Skin diseases (noninfectious)	133	2.1
7	Miscellaneous	199	3.2
8	No disease, including general debility	639	10.1
	Total	6,315	100.0

suitable for the average patient who comes here for convalescent care. So, the importance of being guided in the selection of a boardinghouse or hotel that will accurately follow a dietary scheme and routinization with the spa waters for the particular individual being treated is of major importance.

The mineral waters that are available at the spa are indicated internally in a wide range of convalescent cases. They may be divided into three major groups:

- 1 The alkaline, effervescent, noncathartic waters, represented by Geyser, are indicated in chronic gastric diseases and where the effect of a general tonic water would be of value.
- 2 The alkaline, mildly saline group, such as Coesa water because of its mild laxative action, is safely used in catarrhal diseases of the gallbladder and in the milder forms of irritated colons.
- 3 The alkaline, strongly saline waters, of which the Hathorn Nos 2 and 3 are the best representatives, are used primarily for the relief of constipation.

In addition there is a pure, noncarbonated, mineral-free water, the State Seal, which is indicated in acute gastric diseases and in the various forms of kidney diseases.

The mineral baths and other forms of hydrotherapy may well be considered the *pièce de résistance* in the care of practically all of those convalescent patients, and the routine to be followed is quite variable, depending entirely on the type of individual and the nature of the ailment from which he is convalescing. The balneotherapeutic procedures available include

- 1 The use of the mineral-water baths alone, either in the form of full gas

# CONVALESCENT CARE AT THE SARATOGA SPA

EDWARD J. CALLAHAN, M.D., Saratoga Springs, New York

CONVALESCENT care is an important subject in the practice of medicine, and today it is attracting more and more attention on the part of the general practitioner. The importance of convalescent care and the necessity of bringing it to the minds of general practitioners are so important that the Public Health Committee of The New York Academy of Medicine formulated and published in 1925 a set of standards for convalescent care.<sup>1</sup> A recent review of these standards emphasized the lack of general knowledge regarding the whole subject and the necessity for further study.

At The New York Academy of Medicine on November 9 and 10, 1939, a two-day symposium on the problem of convalescent care was held and about twenty papers were presented.<sup>2</sup> An excellent paper by Woodruff<sup>3</sup> reviews in detail these reports and it is well worth reading. Diseases given special consideration at this symposium included cardiac diseases, renal disorders and infections of the urinary tract, gastrointestinal and respiratory ailments, cancer, postoperative hyperthyroid states, psychiatric disturbances, various neurologic diseases, surgical operations, and orthopedic conditions, as well as the recently delivered mother.

In this symposium the outstanding fact disclosed was that none of the facilities available meet the medical problems involved with the exception of the provision of convalescent care for patients with heart disease. The fact remains that the disease rather than the patient is still the primary interest of most physicians. One of the points emphasized and re-emphasized in the symposium was that unsatisfactory results in convalescent care will continue until it is generally accepted as a fundamental principle that in convalescent care attention must be directed toward the patient as one who has been ill and is recovering and has particular and individual problems to be considered in his course to recovery. The new thought, then, in convalescent care seeks to satisfy the special requirements of the individual who is trying to get well rather

than the convalescent care of pneumonia, rheumatic fever, or duodenal ulcer.

I wonder if we all think along the same line when we use the term convalescent care. One of the best definitions of convalescent care I have ever seen is the following taken from an article by E. H. L. Corwin: "The present-day idea of convalescent care is that of a creative dynamic force, applied to persons recovering from either acute diseases, or operations, or from the exacerbations of chronic maladies, a force which brings into play all the resources of mind and body, of medicine and psychology, to offset the baneful somatic and mental effects of illness. It comprises play as well as rest, it invokes religious emotion and an appeal to reason, it calls for the exercise of mind as well as muscle, it furnishes comforts and stimulates purposeful effort, it provides dressings for surgical wounds and installs sound health habits, it aids the natural recuperative processes and develops social discipline, it expedites recovery and strengthens character. Its aim is restoration of the adult to a state of health, mental poise, and usefulness and of the child to the usual activities of childhood. Convalescent care saves, or should save, the patients the anguish of relapse and of a repeated malady, it saves, or should save, the communities the cost of preventable illness."<sup>4</sup>

Woodruff<sup>3</sup> in reviewing the paper by Pepper<sup>1</sup> at the symposium agrees that no two diseases or two patients ill with the same disease can possibly have the same state of bodily and psychologic conditions after the illness subsides and convalescence begins. He adds: "Certainly, at any rate, if in convalescence there are persistent deviations from normal metabolism, nutrition, body chemistry and physiology, restoration to health may well be expedited if attention is directed to correcting these abnormalities, and, again in this connection, stressing the importance of the individual, not until we learn to recognize in each convalescent the actual abnormalities which persist from the preceding illness and which differentiate that individual in convalescence from his condition in health can we meet properly the therapeutic indications in his particular case."

In comparison with the list of diseases taken up at this conference I am including the sum-

<sup>1</sup> Read at a meeting of the Fourth District Branch of the Medical Society of the State of New York held at Schenectady, New York on October 1 and 2, 1940 and at a meeting of the Medical Society of the County of Schoharie held at Cobleskill, New York on October 8, 1940.

# THE MANAGEMENT OF CLINICAL PROBLEMS INVOLVING THE LARYNX IN INFANCY AND CHILDHOOD

CLYDE A. HEATLY, M D, Rochester, New York

IN ANY discussion of the management of clinical problems involving the larynx in infancy and childhood, attention must be directed immediately to the anatomic peculiarities of the larynx in early life, for herein lies the explanation not only for the frequently stormy manifestations of otherwise mild infections but also for the unceasing vigilance on the part of the physician which a successful outcome commonly demands. The relative smallness of the larynx in infancy, its great irritability, and the ease with which obstructive edema may be produced are indelibly impressed upon all who engage in bronchoscopic work. The structures bounding the upper aperture of the infantile larynx are soft and readily collapsible. The epiglottis is narrow and folded longitudinally, presenting a deep gutter-like posterior aspect. In consequence, the soft yielding aryepiglottic folds are drawn together so as to effect a relative narrowing of the upper laryngeal aperture. The infantile glottis is also proportionally smaller. According to Tucker<sup>1</sup> the anteroposterior measurements vary from 7 to 9 mm., with the subglottic larynx 1 or 2 mm. smaller in diameter in the same subject. The latter measurement is of great importance because the subglottic area is completely surrounded by the cricoid ring and, therefore, is not capable of instrumental dilatation. The cartilages of the larynx of the infant are much softer and more liable to collapse in the case of a laryngeal condition associated with stenosis. The mucous membranes are more vascular as well as more loosely attached, especially in the normally narrow subglottic area. Dangerous obstructions complicating acute infections or instrumental manipulation are, therefore, especially common and may result in asphyxia unless promptly recognized and relieved.

## The Acute Larynx

The management of the acute larynx in infancy frequently presents problems in diagnosis and treatment of unusual difficulty. There can be no question that the facilities of a well-equipped hospital are indispensable in these

instances. The importance of a careful history must be emphasized. Particular inquiry should be directed here to previous attacks of hoarseness or croupiness, to concomitant acute infections in other members of the household, and to any recent episode of choking or gagging suggestive of a foreign body. The literature contains many reports of acute laryngeal disturbances caused by an unsuspected foreign body, and yet it is not commonly appreciated how closely these cases may simulate laryngitis of infectious origin. The following record illustrates this conclusion.

A W., aged 17 months, was admitted to Strong Memorial Hospital on November 17, 1928. Two weeks before admission, slight hoarseness developed, but the child did not appear ill or feverish. The following day, however, she seemed decidedly worse, and the family physician was called. Diphtheria was suspected and antitoxin was administered. Cultures, however, were later reported negative. Nevertheless, some apparent improvement was observed for several days although the hoarseness continued unchanged. Twenty-four hours before admission, signs of laryngeal obstruction appeared. These increased rapidly, so that when the child was finally brought to the hospital an immediate tracheotomy was necessary. Following this she improved rapidly, and on the fifth postoperative day direct laryngoscopy was performed. The larynx appeared markedly edematous, and in the glottic chink was found a large fragment of eggshell. This was removed. The laryngeal edema rapidly subsided and decannulation was possible on the tenth postoperative day. No subsequent difficulty ensued. In reviewing the history with the mother in the light of these findings, she recalled that a choking attack had occurred while feeding the child a hard-boiled egg the day before the onset of hoarseness.

Accurate diagnosis is of particular importance in these acute disturbances. For many years this depended on inferential rather than differential methods. The perfection of the technic of direct laryngoscopy now permits not only careful inspection of the larynx and its adnexae but the removal of secretions or membranes for bacterologic study. The recent spectacular advances in chemotherapy have given a tremendously increased importance to securing careful cultures from the throat and larynx in these cases. Implan-

<sup>1</sup>Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 8, 1940.  
From the Department of Surgery, Division of Otorhinolaryngology, the University of Rochester School of Medicine and Dentistry.

strength baths and full position in the tub or modified mineral baths in which the strength of the carbon dioxide gas or the position of the patient in the tub is varied

- 2 The mineral bath may be followed either by a general body massage or by the use of hot mineral packs to local affected areas either with or without local massage and movement. The frequency of this combination of bath and massage depends again on the ailment from which the patient has been suffering
- 3 The eliminating treatment consists of variable combinations of heat, under-water massage, and douches, using plain water. Either the hot room or the electric cabinet may be used, associated with the various forms of underwater messages, water rubs, and salt and soap rubs and followed by the alternate hot and cold sprays
- 4 The combination of either the mineral bath plus the body massages, local or general, or the mineral baths plus the body massage plus the many varieties of the eliminating routine may be used

In addition to the actual bathing procedures, there are available at the Saratoga Spa many associated treatments, such as colonic irrigations and mechanotherapy (Zander department) in which, through the use of these various mechanical appliances, restoration of damaged joints, muscles, and tendons is accomplished. Also ultraviolet treatments, diathermy, and local mud packs are available. One of the newer departments, which has become active, is the department for treatment by inhalation. Here various forms of oils and medicaments as indicated are used in con-

junction with the inhalation of the mineral waters

The attending physician with a little effort can plan spa activities such as tennis, golf on a therapeutic golf course, archery, swimming in an outdoor swimming pool, and horseback riding. Walking on paths that are graduated as to distance and elevations, which take the patient through some lovely woods and grounds surrounding the various bathhouses, is beneficial. Considerable time should be spent with each of the patients to determine what mode of supplementary spa therapy is best fitted to each case. Unless the patients are fully occupied they frequently become restless and complain of lack of activity.

To summarize briefly, it is important that (1) the patient's care at the spa be supervised by a physician who is thoroughly conversant not only with the physical condition of the patient to be treated but also with the principles of external and internal hydrotherapy and adjunct treatments as practised here, (2) that he select a hotel or boardinghouse whose proprietor will try to follow the dietary regimen that is outlined by his medical advisor, (3) that he avoid indiscriminate and unlimited use of the waters while at the spa

495 Broadway

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## DOCTORS' WIVES BACK HUSBANDS

In a mass protest against the National Federation of Woman's Clubs' endorsement of the Wagner Bill, New Jersey doctors' wives have walked out of the organization. The action was taken through the New Jersey State Medical Society women's auxiliary, which severed its affiliation with the federation.

Explained Mrs G E McDonnell, of Mt. Holly, auxiliary president: "The medical society does not agree with the health policy of the bill. As we are part of the society, we could not approve anything contrary to the society."

## MORE ATROCITIES

From the Scranton (Pa.) Times

London, Dec 11 (UP)—Police and air-raid wardens warned Londoners yesterday against a new, deadly German bomb which resembles a gas mask container and explodes in the hands of anyone who picks it up.

Bombs of this type were scattered about London during the ferocious all-night German raid Sunday night and Monday morning.

The bomb consists of a metal cylinder, which contains a small bomb and from which dangles about five inches of wire.

—J.A.M.A.

tory stridor with intermittent cough was noted. Generalized coarse rales and some decrease in breath sounds at the left base were reported. Fluoroscopic examination was entirely negative and gave no suggestion of a nonopaque foreign body. Bronchoscopy showed mild hyperemia and swelling of the larynx, especially in the subglottic area. These same changes extended into the tracheobronchial tree. Secretions were scanty. A culture obtained at this time subsequently showed *Streptococcus viridans* and diphtheroids. There was no evidence of a foreign body. The following morning signs of obstructive laryngeal dyspnea appeared, and by late afternoon they had increased to a point where tracheotomy was necessary. The child did well for the next eighteen hours but then began to develop spells of cyanosis with labored respirations. The trachea was kept as clean as possible by the frequent use of suction aided by the instillation of small amounts of normal saline. It was noted that the secretions had become almost glue-like in character. Fluids were forced by infusions and an oxygen tent was employed. Sulfapyridine in full doses was begun soon after admission and continued. In the early morning of December 22 the child suddenly stopped breathing, and all known means of resuscitation failed. Postmortem examination showed the lower trachea and the entire bronchial tree completely occluded by a thick, mucopurulent, greenish, extremely tenacious secretion which also occluded even the smaller bronchioles. The clinical and postmortem diagnosis was acute laryngotracheobronchitis.

J. P., aged 4 years, was admitted to Strong Memorial Hospital on March 11, 1940. Two days prior to admission this child developed an acute infection of the upper part of the respiratory tract accompanied by hoarseness and croupy cough. The following day he seemed definitely worse and had four attacks of difficult breathing. During these attacks he became blue. On admission to the hospital he appeared extremely ill, with marked inspiratory stridor and signs of advanced obstructive laryngeal dyspnea. The temperature was 104.9 F. Tracheotomy was performed shortly after admission. The child was placed in a croup tent, the foot of the bed was elevated, and 2.5 Gm. of sulfapyridine in 400 cc. of sixth normal sodium lactate administered subcutaneously. Six hours later 500 cc. of a similar solution containing 2 Gm. were given. It was specifically ordered that no sedation was to be given. The trachea was frequently cleaned by suction through the tracheotomy cannula. Twelve hours after tracheotomy respirations again became labored in spite of suction cleansing. A 4-mm. bronchoscope was inserted through the tracheotomy wound. Both main bronchi were seen to be filled with thick, dark brown secretion. Fifteen cubic centimeters of normal saline solution with

epbedrine ( $\frac{1}{4}$  per cent) were directly irrigated into each bronchus and removed by suction. This loosened and liquefied the viscid, gumlike secretions that were responsible for the continued dyspnea and permitted thorough removal. The immediate improvement in breathing was amazing. This same procedure was necessary twice on the following day and once on the third postoperative day. Otherwise, frequent suction treatment through the cannula proved sufficient. Sulfapyridine was continued by mouth in doses of 2.5 Gm. daily for seven days, maintaining a blood level of 7.4 mg. per hundred cubic centimeters and then gradually reduced. The high fever came down nicely over this period. *Pneumococcus* type IV was cultured from the secretions. Decannulation was possible on the seventeenth postoperative day, and the subsequent recovery was uneventful. This child owes his recovery to the unceasing vigilance of my resident, Dr. Tipple.

C. H., aged 3 years, was admitted on March 19, 1938. The child was extremely ill and drowsy, with a temperature of 104 F. Breathing was stridulous and labored. Marked retraction of the soft tissues about the thoracic cage was present. The white blood count was 10,000. The child was put in a croup tent but showed no improvement. Tracheotomy was, therefore, promptly performed. Cultures showed *Streptococcus viridans*, *Haemophilus influenzae*, and a few *Bacillus coli*. Sulfanilamide was begun in full doses, fluids were forced, and a transfusion of 175 cc. was given. Thick tenacious secretions continued from the tracheobronchial tree for three days and necessitated repeated careful removal by suction. After this period they decreased rapidly. Decannulation was possible on the seventh postoperative day, and the child was discharged from the hospital on the tenth day.

*Comment*—These cases illustrate clearly the gravity of nondiphtheritic infections in infancy. Reports vary widely concerning the organism most commonly encountered in acute laryngotracheobronchitis. The majority of cases are caused by the hemolytic streptococcus, and in these instances sulfanilamide should prove a most helpful adjunct. It is of interest, however, to call attention to the bacterologic studies of Bradford and Leahy<sup>2</sup> made in this hospital which showed the green, producing streptococcus to be the predominating organism in a series of 28 cases of nondiphtheritic laryngitis. It is, in my experience, hazardous to rely too strongly on chemotherapy alone. Early tracheotomy with frequent suction cleansing of the viscid secretions is of paramount importance. Small amounts of normal saline or dilute sodium bicarbonate solution instilled directly through

tion on Löffler's mediums and blood-agar plates, as well as mouse inoculation, will often give vital information within twenty-four hours and should be routinely carried out. The clinical manifestations of nondiphtheritic and diphtheritic infections are so strikingly similar that a final diagnosis often depends on the results of direct laryngoscopy as well as bacteriologic studies.

Careful exclusion of extra laryngeal diseases is important. It has often been said that the retropharyngeal abscess is one of the most frequently overlooked conditions in infancy, and particular attention should be directed to the laryngeal disturbances that it not uncommonly produces in the form of stridor, hoarseness, and increasing obstructive dyspnea. Failure to recognize such an abscess is usually caused by failure to consider it in the differential diagnosis, because close inspection and gentle digital palpation, as well as lateral roentgenograms of the neck, will readily reveal its presence in most instances. The following case presented a confusing picture of obstructive laryngitis until examination revealed its true character.

C. R., aged 12 weeks, admitted to Strong Memorial Hospital on March 16, 1939, was acutely ill with the clinical picture of marked obstructive laryngeal dyspnea. The child had had an infection of the upper part of the respiratory tract about three weeks previously. For the three days preceding admission he had appeared acutely ill with fever, hoarseness, rasping stridor, and increasing dyspnea. Feedings had been taken poorly and finally refused entirely. The child was sent into the hospital for tracheotomy. Examination showed an extremely sick infant exhibiting the classical signs of severe obstructive laryngeal dyspnea. Edema of the posterior faucial pillar on the left side was noted. Careful digital palpation disclosed a fluctuant swelling about the size of a small hen's egg on the left side of the hypopharynx just above the laryngeal level. Surprisingly little cervical adenitis was present but was more marked on the left side. The swelling was incised and a large quantity of pus was evacuated. Postoperative recovery was rapid and uneventful. Cultures showed *Streptococcus hemolyticus*.

Acute infections of the larynx in infancy are so frequently complicated by varying degrees of obstruction that special consideration should be given to their clinical manifestations. The picture of obstructive laryngeal dyspnea should be completely familiar to every physician, for, while the increase of dyspnea may be gradual, the transition to terminal asphyxia and collapse in infancy may be

alarmingly sudden. Respirations are rapid, labored, and accompanied by a harsh inspiratory stridor. Pallor is more common than cyanosis. The child is restless and anxious. The progress of the obstruction can best be followed by observing the degree of retraction about the thoracic cage, for with increasing dyspnea increasing retraction is noted in the suprasternal notch, the supraclavicular fossae, the intercostal spaces, and the epigastrium. Cyanosis and apathy usually denote terminal exhaustion. During the stage of restlessness sedation must be carefully avoided. In the presence of definite evidence of increasing obstruction it is sheer folly to continue watchful waiting. Tracheotomy is indicated and should be carried out promptly in the interest of safety.

The importance of prompt tracheotomy in these cases of nondiphtheritic obstructive laryngitis is, in my opinion, thoroughly established. Not only does it insure a proper airway and put the inflamed larynx at rest but it permits repeated drainage of the profuse tracheal secretions that frequently complicate many of these cases and thereby constitute a continued source of danger from low obstruction for several days. This is particularly true in severe cases of acute laryngotracheobronchitis in which an accumulation of thick tenacious jelly-like secretions in the tracheobronchial tree inevitably proves fatal unless repeated efforts at removal by suction or even bronchoscopic methods succeed in preventing asphyxia. Certain of these cases are especially fulminating, and, in spite of prompt tracheotomy, repeated suction cleaning of the tracheobronchial tree, and supportive measures—such as oxygen, transfusions, and infusions—they rapidly progress to a fatal termination. It is hoped that chemotherapy may, if instituted promptly, help in this desperate situation. The following case reports illustrate first, a typical fulminating infection ending fatally in spite of all efforts, and, second, 2 severe infections with successful outcome.

R. R., aged 1½ years, was admitted to Strong Memorial Hospital on December 19, 1939. The patient was well until two days before admission, at which time hoarseness was noted and he was thought to be developing a simple cold. Hoarseness and irritative cough continued in spite of inhalations. The possibility of a foreign body was considered, and, although an x-ray examination was entirely negative, he was sent to the hospital for study. Examination showed a mildly ill infant with slight fever. The pharynx was moderately hyperemic. A wheezy inspira-

take the form of a congenital hyperplastic redundancy of the subglottic tissues, a subglottic diaphragm, or actual tumor formation. The following case history illustrates such an instance.

R. C., a boy aged 2½ months, was admitted to the hospital with a diagnosis of probable thymic enlargement. Stridor was noted shortly after birth, and there had been periods of actual dyspnea. About two weeks before admission breathing became increasingly labored, and for the preceding twenty-four hours the dyspnea had become alarming, with periods of marked cyanosis.

Examination showed a fairly well-developed infant in marked respiratory distress, with both inspiratory and expiratory stridor. The chest was clear clinically, and neither fluoroscopic nor roentgen study showed any abnormality in the chest, neck, or mediastinum. The child was placed in a croup tent, but the evident progression of signs of obstruction necessitated tracheotomy a few hours later. This promptly relieved the dyspnea. After a few days of rest direct laryngoscopic examination was performed. The epiglottis and laryngeal structures were normal. About 1 cm. below the left vocal cord, however, a large mass was discovered protruding from the posterior wall of the subglottic tissues. The mass was firm on probing and was large enough to prevent the passage of a 3-mm. bronchoscope. It was removed by biting forceps, the work being done through a 5-mm. tracheoscope in order to separate and protect the vocal cords. A second inspection five days later showed that a small remnant persisted, and this was satisfactorily removed. Decannulation was possible ten days later, and the child was discharged from the hospital shortly afterward. No subsequent respiratory difficulty has been noted. The biopsy report was as follows: "Section reveals a polyp-like structure formed of dense fibrous tissue covered with pseudostratified columnar epithelium and containing many small glands."

## Conclusion

The management of both acute and chronic disorders of the larynx in infancy and childhood presents many problems of unusual difficulty. It is hoped that this report will emphasize the necessity for careful direct examination of the larynx so that differential rather than inferential methods of diagnosis may be more generally employed.

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## Discussion

Dr. Marvin F. Jones, *New York City*—The ear, nose, and throat conditions of children consist of a specialty within a specialty. Until comparatively recently the study of those conditions peculiar to children has been somewhat neglected. Dr. Heatly's paper again accentuates the importance of a study that will result in more intelligent means of treating a child before he has reached the cooperative age.

The problems concerned are not only the various diseases to which these children are exposed but also the attitude of the parents. Sometimes it is most difficult to obtain the whole-hearted cooperation that makes effective therapy possible. Our attitude toward croupy manifestations in children has been principally directed toward the justly alarmed parents. It is most difficult in this situation to advise the procedures that are necessary for eventual cures. The attitude of the attending pediatrician can be of great help. Perhaps the surest approach to a solution of the problem is first to convince the pediatrician of the rationale of the procedures we propose to use.

In more recent years and, specifically, the last two years, I have had more unusual laryngeal manifestations in children called to my attention than ever before. The first, I believe, was about a year ago, when Dr. Brancato, of Paterson, told me of an apparent epidemic of alarming laryngeal stridors. More recently, Dr. Reynolds has called to my attention the frequency of occurrence of the *Staphylococcus hemolyticus* as an upper respiratory infection in children and has also mentioned the peculiar chest pathology that accompanies or follows these attacks. It seems to be a *staphylococcus* of more virulence than we have been accustomed to see. The laryngotracheobronchitis, which we have always considered a serious situation, apparently is now of more frequent occurrence. This seems to be not only the case in New York but has also been observed in at least one state in the Middle West. Bronchology has offered a lifesaving aid for some of these patients, and chemotherapy has evidently aided to some degree—as yet unknown.

The common error is mistaking a laryngeal diphtheria for these less specific cases. Diphtheria antitoxin has been used in some cases without result.

It is fortunate that a paper such as Dr. Heatly's should be read before the society, since this phase of his subject is, in my opinion, increasing rather than diminishing at the present time.

Dr. Thomas G. Tickle, *New York City*—Dr. Heatly has covered his subject so well that I can merely emphasize some of the points that he has brought out.

the tracheotomy tube stimulate the cough reflex and aid materially in the effectiveness of the suction treatments. The value of postural irrigation of the tracheobronchial tree, as suggested by Galloway,<sup>3</sup> is fully corroborated in the second case reported and should, in my opinion be tried in the more severe cases.

### The Chronic Larynx

The larynx in infancy may be the seat of a variety of disorders of chronic nature which manifest themselves by varying degrees of stridor, hoarseness, or obstructive dyspnea. Inferential methods of diagnosis are here, unfortunately, common, usually erroneous, and always deplorable. The safety of the patient requires a complete physical examination, fluoroscopic and roentgen studies of the neck, chest, and mediastinum, and above all a careful direct study of the larynx without anesthesia. There is still a common tendency to attribute many of these disorders to thymic origin because of an enlarged shadow reported in the fluoroscopic or roentgen examination without direct inspection to exclude a laryngeal cause. In a series of 20 cases encountered by me over an eleven-year period, such a diagnosis had previously been made in 11 patients, and only the failure of roentgen therapy to influence the symptoms was responsible for further study. In a series of 15 cases of chronic stridor reported by Kennedy and New<sup>4</sup> in 1931, a diagnosis of enlarged thymus had previously been made in 9, and in only 1 instance was a thymic origin finally established and thus a tumor rather than a simple hypertrophy. It is an important clinical fact that in the hands of many roentgenologists the roentgenogram does not give a true picture of the size of the thymus gland. Hasley and De Tomasi,<sup>5</sup> by cinex camera studies, have demonstrated that the size of the thymic shadow varies not only with the phase of respiration but also with the phase of the cardiac cycle. Careful fluoroscopic studies from both the anteroposterior and the lateral positions are necessary to the recognition of these variations. It is imperative in the presence of persistent stridor, hoarseness, or dyspnea in infancy that the final diagnosis be withheld until careful direct inspection of the larynx has been completed. Such an examination is particularly indicated whenever roentgen treatment of an apparent enlargement in the superior mediastinum has not resulted in prompt relief of symptoms.

In the series of 20 cases that I have encountered,<sup>6</sup> the final diagnosis was as follows:

congenital laryngeal stridor, 12 cases, paralysis of the vocal cord, 2, tumor of the larynx, 1, congenital web, 1, subglottic tumor, 1, subglottic stenosis, 1, tumor of the mediastinum, 1, congenital anomaly of the ligamentous attachments of the sternum, 1, total, 20.

As will be observed from this study, the commonest cause of chronic stridor in infancy is the soft, flabby type of larynx with an elongated or broadened epiglottis and flaccid aryepiglottic folds. This condition of exaggerated infantile characteristics is clinically known as congenital laryngeal stridor and, except for occasional fatality from acute intercurrent infections of the respiratory tract, regularly improves during the second year with the normal growth of the larynx. Paralysis of one or both vocal cords in infancy is a frequently overlooked cause of stridor or hoarseness. Gradual improvement usually occurs. Many cases of fatal asphyxia neonatorum undoubtedly result from an unrecognized bilateral cord palsy. Prolonged, difficult labor with accompanying instrumentation may injure not only the recurrent nerves but also the cricoarytenoid joints with resulting fixation or dislocation of the arytenoid cartilages. Laryngeal paralysis of central origin has also been reported, resulting from intracranial hemorrhage incident to difficult labor. One of the cases in my own series was of this variety. The commonest tumor encountered in infancy is the papilloma that may be congenital and is characteristically multiple and recurrent. Angiomas and cysts have also been observed. Congenital webs are occasionally encountered in the form of a membrane uniting the vocal cords at the anterior commissure and extending backward for a variable distance to a crescentic margin. These webs are caused by an arrested separation of the fusion which normally obliterates the primitive glottis during the middle of the second month of fetal life. Structurally they consist of a wedge-shaped mass of tissue and may contain connective tissue, muscle fibers, rudimentary glands, and occasionally cartilage. Simple incision or excision is usually followed by prompt recurrence with troublesome adhesions so that special procedures have been evolved to facilitate the management of this interesting condition. The congenital web must be carefully differentiated from an acquired diaphragm or false web resulting from injury or ulceration of the laryngeal mucosa. Chronic stridor and dyspnea in infancy may occasionally result from an obstruction in the subglottic area. This may

# Case Report

## PRIMARY LYMPHOSARCOMA OF THE TONSIL

N P Cosco, M D, and H F POHLMANN, M D, F A C S, Middletown, New York

THE importance of taking biopsies in every suspicious lesion is well exemplified by the following case in which the initial symptom was not particularly severe and the physical findings are not too unusual.

### Case Report

J H W, a white man, aged 54, fire-truck driver, weight 159, was seen on February 21, 1939, because of "rawness in throat," of forty-eight hours' duration, following fighting an all-night fire. Temperature, pulse, and respiration were normal. The physical examination was essentially negative, except for small, shotty, cervical glands, a diffusely reddened throat, and a moderately enlarged right tonsil. He was given a gargle and some lozenges and told to return if the symptoms persisted. On February 24, 1939, he returned with the same symptoms and the same signs, without the diffuse redness previously noted. At that time, under local anesthesia, a biopsy was taken from the right tonsil with a scalpel diathermy in the office. This was reported by the State Institute for the Study of Malignant Disease at Buffalo, as "lymphosarcoma of the tonsil" (Fig 1). Wassermann was negative. Blood and urine were not unusual.

On March 1, 1939, three radon seeds were implanted at the base of the tonsil in the form of a triangle. This was done under local anesthesia in the office. X-ray therapy was instituted by Dr J Walton at the Horton Memorial Hospital, Middletown, New York, on March 4, 1939. The seeds were removed on March 10, 1939. Therapy, in all, consisted of 1,000 millicurie hours gamma radiation and 3,220 r distributed over four fields with one field directed from the opposite side. He was last seen on February 19, 1941. He feels fine and weighs 153 pounds. The tonsil is practically obliterated, and no cervical glands can be felt.

### Discussion

This case when first seen appeared to be one of those ordinary run-of-the-mill cases often seen in office practice. Nothing about its appearance would lead one to suspect malignancy. Yet, somehow it did not seem "quite right," and, for that reason only, a biopsy was done. Both procedures—biopsy and implantation of radium—were done without difficulty under local anesthesia in the office. The end results were exceedingly gratifying. The case serves to stress the fact that malignancy must always be suspected, however trivial the initial complaint.

Once suspected, there should be no hesitancy in taking a biopsy.

### Summary

1 A case of primary lymphosarcoma of the tonsil is presented.

2 The initial complaint was "rawness in the throat."

3 All the necessary diagnostic work and radium implantation was done in the office without difficulty and without additional expense to the patient.

4. The importance of suspecting malignancy of the tonsil and of taking tonsillar biopsies is stressed.

Acknowledgment is made to the State Institute for the Study of Malignant Disease, Buffalo, to Dr David Satenstein of the New York Skin and Cancer Unit, and to the Photographic Department of the New York Post-Graduate Hospital for kind cooperation in making the photomicrograph possible.

29 Railroad Avenue

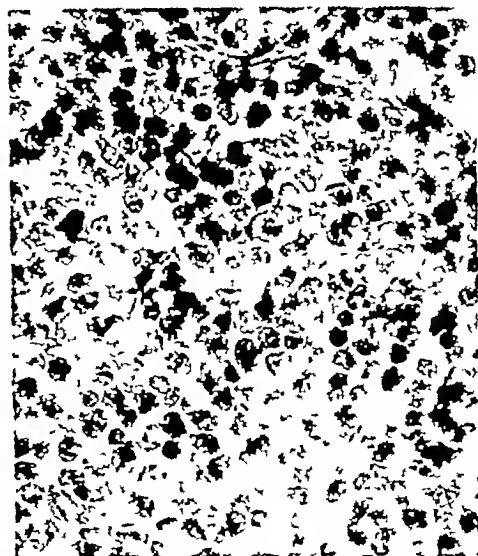


FIG 1 Photomicrograph of biopsy reported by State Institute as lymphosarcoma of tonsil

Organized medicine in Meeker County, Minnesota, has started a campaign to eliminate all tuberculosis in the county.

In the University of Minnesota Student Health Service every new student is given a comprehensive medical examination.

Because of the soft structures and the normally small larynges, only those doing endoscopic work can realize the difficulties one encounters and how easily one can cause an edema of the larynx.

I agree with Dr Heatly that when called to see an infant with an acute involvement of the larynx it is most important to obtain a complete history—when the symptoms began—always bearing in mind the possibility of a foreign body in the larynx

Persistent questioning helps parents to recall a possible instance of choking and gagging while the child had food or some unknown substance in its mouth.

A routine examination should be followed in these cases, including x-rays—anteroposterior and lateral—from the ears to the hips

G P, aged 3, was playing on the floor. She started to cry and appeared to have some difficulty in swallowing. She was taken to a hospital where the roentgenologist took films of the chest and abdomen and from the chin up. When read, nothing unusual was observed, so the parents were told that their child "had swallowed nothing." However, the symptoms continued, and, five days later when films were taken from the ears to the hips, an open safety pin was observed in the larynx. After its removal, the baby recovered.

A retropharyngeal abscess in an infant requires skillful care, especially when inserting a tongue depressor for examination, as in some cases the pressure of the tongue has closed the epiglottis, thus causing death.

A method of evacuating the pus which has proved successful is that of attaching an antrum cannula to a tube connected with a suction bottle, inserting the cannula into the abscess, and aspirating the contents, after which the abscess can be incised and drained, thereby preventing the aspiration of pus into the lungs.

In infants with a laryngeal obstruction—the symptoms of which are retraction of the supraclavicular, infraclavicular, and intercostal spaces, restlessness, choking, and ashen color of face—a paralysis of the respiratory center will result, and one should never wait for a cyanosis before doing a tracheotomy.

Recently, a greater number of infants and children have been seen with laryngotracheitis, and in these cases an early tracheotomy is indicated.

One should remember that these younger patients breathe better in a sitting position, often when placed in a reclining position for a tracheotomy they cease to breathe. Consequently, if there is marked dyspnea, a tracheotomy should be performed with the patient in a sitting position.

A frequently-asked question is: When is it safe to remove the tracheotomy tube?

Not until the tube has been plugged one-half of the way, then three-quarters of the way, and, lastly, after it has been plugged for forty-eight hours. (Never use an ordinary cork for plugging; it becomes friable and is liable to crumble and become inhaled into the lung. Use an orangewood stick or a rubber cork for plugging.)

I agree with Dr Heatly that no sedative such as opium should be given to children. I would hesitate to irrigate the lungs, much preferring to place the child in a steam bath and give it soda bicarbonate by mouth to liquefy the secretions.

Many cases of chronic larynx have been attributed to an enlarged thymus. After having been connected with a hospital where a large number of adenoid and tonsil operations have been performed, I believe that this condition is difficult to diagnose, the diagnosis depending largely on the roentgenologist.

Few cases of congenital webs are seen, and the known treatment is unsatisfactory.

## MANKIND'S DEBT TO MEDICINE

There is not an area of human life or interest to which medicine has not made its contribution. Into literature and representative and plastic art, into music and mathematics, physical and biologic science, psychology and social science, and philosophy and theology, into our daily living, into our homes and business, and into our leisure and recreations, medicine has entered, not as an interloper but as an interpreter, not as a servant but as a teacher. From the moment of our first rising in the morning until the moment of our last conscious thought in the evening, medicine has in some way modified and sculptured our lives. Our diet and our dress, our work and our play, our thought and our prayer even, our rest and our travel have been influenced in the world in which we live today, whether it is amidst the thundering tanks of an attack or amidst the peace of Angelus-time in the countryside, whether it is amidst the stench of exploding bombs or among the sweetly floating perfumes of the summer flowers. In all of

these, medicine has had its part in molding the daily régime that brings peace or turmoil, worry or joy, to the last and least of us.

It would not be in place to review here the recent findings of anatomy and physiology, of pharmacology and pathology, of clinical medicine and surgery, and of the constantly increasing number of specialties to prove my point. Suffice it to say that from the moment of conception, and even before, until the grave we are with each breath through which our life is prolonged increasing the debt which we owe to the science and art which the first of the encyclopedists, Isador of Seville, pronounced to be the "synthesis of all the sciences and all the arts," because it concerned itself with that most valuable creature in God's creation, the human being.—*Alphonse M Schwittalla, S.J., Dean, St Louis University School of Medicine, address before the eighteenth annual meeting of the Woman's Auxiliary to the American Medical Association held at New York, June 10-14, 1940*

lapsed into coma. The dressing was again soaked with thin brownish material. A profuse involuntary fecal discharge from the wound occurred and was liquid in nature and brownish black in color. The patient expired the same day.

To summarize we can say that the patient was admitted for treatment of painless jaundice of three weeks' duration. A cholecystogastrostomy was performed in the presence of an enlarged cystic and common bile duct on the second day of hospitalization. Vitamin K and bile salt therapy had been given over a period of five days before operation. Although there was no increase in temperature, pulse, and respiratory rates, the postoperative course was complicated by the following: (1) failure of the jaundice to clear, (2) hemorrhage from the incision, and (3) profuse drainage of bile from the wound. The patient slowly weakened and, despite supportive measures, died on the fifteenth postoperative day.

### Discussion

DR. ROBERT B. LOBBAN: The most significant points are the painless jaundice of three weeks' duration and the palpable gallbladder. The rest of the history was essentially negative. I felt we were dealing with an obstruction somewhere between the opening of the cystic duct and the duodenum. This is often due to carcinoma of the head of the pancreas and was the first possibility entertained. The second was carcinoma involving the ampulla of Vater. A third possibility was a silent stone in the common duct. Inasmuch as this patient was afebrile and the white and differential counts were normal, we did not expect to find a stone in the common duct. The fourth possibility was obstruction due to extrinsic pressure on the common duct. At operation it was established that the mass palpated in the right upper quadrant was the gallbladder. It was found to be tremendously distended, as were the cystic and common ducts. We could not feel a stone in the common duct. Palpation of the common duct down to and including the ampulla of Vater and the duodenum failed to reveal a mass. Four or five edematous glands were found in the gastrohepatic ligament. These were soft and mushy, did not obstruct the common duct, and gave no appearance of malignancy. The head of the pancreas was enlarged and felt somewhat constricted and shotty. It was, however, considered to be normal at this time. This reduced the possibilities to something in the

duct itself. At times a common duct is opened without finding anything, except "mud," which can give jaundice and pain.

Therefore, in this case the common duct was opened. Through this opening a probe was easily passed through the ampulla of Vater, and the end of it could be felt in the duodenum. The bile in the common duct was perfectly clear. We still did not know what caused the jaundice in this individual. The head of the pancreas was not characteristic of carcinoma, and when the probe was in place I palpated for the possibility of carcinoma in the duct itself. Even though no obstruction was found to account for the jaundice, a T tube was placed in the common duct for temporary drainage. A biopsy of one of the glands in the gastrohepatic ligament was taken. The patient had a slight temperature elevation on the second and third day after operation, but from then on it was approximately 100 F (37.8 C) during the entire postoperative course.

Drainage of bile through the T tube was adequate for nine days. At that time she started to leak bile around the T tube, and apparently there was a breakdown of the cholecystogastrostomy. From this time on the course was progressively downhill.

DR. WRIGHT: Dr. Carter has come to discuss this problem from the standpoint of differential diagnosis and clinical course. There are two questions that I would like to have discussed. First, is it not rather unusual for diarrhea to be a symptom associated with retention of bile? Second, why was there no decrease in the jaundice despite adequate drainage of bile from the tube?

DR. R. FRANKLIN CARTER: My answer to Dr. Wright is that diarrhea is not a common symptom associated with obstructive jaundice. It is possible that the pancreatic juice was being sidetracked back into the biliary system by whatever obstruction existed, and this insufficiency of pancreatic juice may have caused the diarrhea in this case. We do not understand why the course of the jaundice is not occasionally influenced by external drainage. We have had several patients who have acted the same way as this one. We followed 1 case for two and one-half months, and the striking thing was that the bilirubin of the bile was normal though there were no bile salts, cholesterol, or pancreatic ferments present. A possible explanation for the failure of the jaundice to clear after external drainage would be the presence of hepatic insufficiency due to cirrhosis or hepatitis.

# Diagnosis

THIS new JOURNAL section carries case reports that have been made the subject of discussion from the point of view of the diagnostic process needed and the post-mortem evidence. All the cases are selected because of some unusual interest. Two hospitals in this city supply this material, each six times a year. Reports from the New York Post-Graduate Hospital alternate with reports from Bellevue Hospital, Fourth Medical Division.

## CLINICOPATHOLOGICAL CONFERENCES

NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL, COLUMBIA UNIVERSITY DEPARTMENTS OF MEDICINE AND PATHOLOGY

Date December 17, 1940

Presiding Dr Irving S. Wright

### History

DR MAURICE BRUGER This patient was a white American woman, 61 years of age, who was admitted to the New York Post-Graduate Hospital complaining of generalized pruritus and painless jaundice of three weeks' duration. There had been a loss of 20 pounds in weight in the last six months. Nausea, vomiting, and related symptoms were absent. Three to four loose, light yellow stools had occurred daily for the past six months. No blood or mucus was seen. The patient denied contact with any hepatotoxic agents.

There was no history of preceding serious illnesses or operative procedures. She had two normal pregnancies and one miscarriage. Menopause occurred at 51 years of age.

On physical examination the patient appeared to be comfortable but markedly icteric. Examination of the head, neck, chest, and heart was normal. A nontender mass was felt in the right upper quadrant, the outline of which resembled the gallbladder. The spleen and liver were not felt.

Urinalysis showed a 2 plus protein and 2 plus foam test for bile. Bleeding and coagulation times were within the normal range. The serum Van den Bergh was 7.6 mg of bilirubin per hundred cubic centimeters with a strong direct positive reaction. The icteric index was 7.14. Blood glucose and urea nitrogen studies were normal.

Two days after admission a cholecystogastrostomy was performed. The operative note read as follows:

"The gallbladder was found to be dilated and under tension. The cystic duct and the common duct also appeared to be moderately dilated. Several enlarged lymph glands were found about the common duct, and one was removed for microscopic study. There were

no nodular obstructions demonstrable at the head of the pancreas. A probe was easily passed through the ampulla into the duodenum. A T tube was inserted into the common bile duct for decompression, and a cholecystogastrostomy was performed in the usual manner for permanent drainage."

The portion of the gallbladder wall which was removed to form the stoma of the cholecystogastrostomy was examined histologically and revealed papillary hyperplasia. Four pieces of black bilirubin "gravel," each about 5 mm in diameter, were found in this portion of gallbladder wall. Microscopic examination of the lymph node showed chronic lymphadenitis but no evidence of malignancy.

The patient received a transfusion of 500 cc of citrated whole blood immediately after the operation. The postoperative course remained satisfactory for eight days. On the ninth postoperative day the patient complained for the first time of severe pain and oramphike sensations in the abdomen. Vomiting occurred on one occasion. A large amount of drainage occurred about the T tube. Temperature was 100 F (37.8 C), pulse rate, 104, and the respiratory rate, 18. The clinical impressions at this time were (1) that a slough of the cholecystogastrostomy had occurred with the formation of a fistula and (2) that peritonitis had set in.

On the following day the dressing was found to be saturated with brownish material characteristic of high intestinal or stomach contents. The abdomen, however, appeared soft. On the tenth postoperative day the skin about the tube appeared irritated but the secretion on the dressing was now less marked. Temperature, pulse, and respiratory rates were normal. On the thirteenth postoperative day a considerable amount of drainage which appeared bloody was found oozing around the T tube. On the fifteenth postoperative day the patient complained of epigastric pain and

tumor The distal end being turned in, the proximal end is either anastomosed to the jejunum or is also turned in and a gastroenterostomy performed

I personally feel that the first stage of the operation carries with it a great risk and that a simpler procedure should be performed—such as a simple cholecystostomy with only enough exploration to rule out stones in the common duct and to determine the extent of malignancy Then, after the jaundice is completely clear a one-stage operation may be carried out, implanting the common duct into the jejunum, excising the tumor area, and then doing a gastrojejunostomy

DR. WRIGHT What is the mortality rate in this type of procedure? Is carcinoma of the ampulla of Vater particularly malignant?

DR. LOBBAN Without operation the prognosis is nil and the patients usually die within six months Palliative operation, consisting of anastomosis of the gallbladder with the stomach, duodenum, or jejunum, will probably prolong the patient's life, and there have been cases reported in which the patients have lived three or four years The mortality of this procedure is probably 20 per cent The mortality of the radical operation consisting of two stages will run approximately 40 per cent The complications in the unoperated cases are usually either massive hemorrhage from the ulcerated area in the duodenum, general bleeding due to the extreme jaundice, or ascending suppurative cholangitis with associated hepatic insufficiency Complications in the operative group may be peritonitis or hepatic insufficiency Most observers report that carcinomas of the ampulla of Vater are relatively slow to grow and to metastasize

### Pathology

DR. MAURICE N. RICHTER The principal lesion in this case was not particularly easy to demonstrate at the time of the autopsy The only thing observed at the site of the ampulla was that it seemed a little more prominent than usual It projected into the lumen of the duodenum When we sectioned the ampulla, the tissues themselves were a little firmer and a little grayer than usual The liver was enlarged and jaundiced In the region of the operation there was a small amount of brown material and pus Terminal infection in the peritoneal cavity was present I do not understand the bleeding, because no blood was found in the gallbladder or in the ducts and the feces were light brown

rather than black or bloody The pancreas showed no changes of interest, and the pancreatic duct opened separately from the common bile duct Histologic examination of the ampulla showed an atypical epithelial growth infiltrating the tissues. There was a strong tendency for it to form glandlike areas, and thus it should be called an adenocarcinoma There was no infiltration in the duodenum itself No metastases were observed The liver showed changes merely of biliary obstruction, and there was a considerable amount of liver degeneration Some of the small bile canaliculi had bile in their lumens

This case illustrates the type of carcinoma that causes marked interference with function, not because it is histologically malignant but because of its position As far as tumors of the ampulla of Vater are concerned, six possibilities regarding the site of their origin are mentioned in the literature In the great majority of cases it is impossible to differentiate between the six different types The main difference is in their form, some being papillary and others being more solid and ulcerative

Recent authors have brought out the fact that blood in the stools is the only factor that will differentiate a carcinoma of the ampulla of Vater from other types of obstruction to the common duct<sup>1</sup> The tumor in this case was not the type that would produce bleeding, and so the finding of blood would not have helped us much There was no fibrosis in the pancreas or evidence of obstruction in the pancreatic duct I do not believe we can blame the diarrhea on pancreatic obstruction

### Pathologic Diagnosis

Adenocarcinoma of the ampulla of Vater

DR. BENJAMIN SILBERG What was the cause of death?

DR. RICHTER There was localized peritonitis with pus under the right dome of the diaphragm

DR. FERDINAND G. KOJIS Can you explain the fecal discharge?

DR. RICHTER No

DR. WRIGHT How did the fecal material get into the peritoneal cavity?

DR. RICHTER We could not demonstrate a fistula The exact point of leakage was not seen

DR. CARTER I would like to ask if it is possible to diagnose these cases before op-

<sup>1</sup> Cooper, W. A. *Ann. Surg.* 106: 1009 (Dec.) 1937

I think it is difficult to show obstruction of the common duct with a probe at operation as well as at autopsy. We have recently seen a patient on whom a cholecystectomy was performed, and at operation no evidence of common duct obstruction was found. However, when hippuran was introduced into the duct under a pressure of 10 cm of water, none entered the duodenum. The present case may have had enough of an obstruction to prevent the flow of bile under physiologic conditions but not sufficient to be discovered at operation. When surgeons examine for common duct obstruction at operation, they tend to use much greater pressure than is exerted by bile under normal conditions.

DR WRIGHT: The administration of bile salts and vitamin K to jaundiced patients should be discussed.

DR BRUGER: Bile salts must be administered routinely when vitamin K is given, since, in the absence of bile, absorption of vitamin K from the gastrointestinal tract is questionable. Bile salts are given by mouth in doses of 0.5 to 1 Gm three times a day. Vitamin K may be administered by the same route in its natural form or as the synthetic compound 2-methyl-1,4 naphthoquinone in doses of 2 to 4 mg daily. A prothrombin time should be done prior to surgery, and operation should be performed only when this is within normal limits.

DR WRIGHT: I think we should consider whether anything would have been gained by more complete preoperative work-up.

DR LOBBAN: With the T tube in place we planned to inject some hippuran and find out what was causing the obstruction in the ampulla of Vater. The patient's progress was good, and this was to be done at the end of the first week. However, at that time there was evidence of sloughing of the cholecystogastrostomy, and thus the possibility of getting a good picture was poor. We might have attempted a duodenal drainage preoperatively, but, because the patient's icteric index rose rapidly to 71.4 and since her stools were acholic, this was not done. Diarrhea had been present for six months prior to her jaundice. The stools were watery or semi-formed, averaging three to four a day. No blood, pus, or protozoa were found on repeated examinations. For these reasons no gastrointestinal x-rays were taken.

DR RICHTER: Dr Lobban mentioned several possibilities for clinical diagnoses, then, at operation proceeded to rule them out. That leaves us without a clinical diagno-

sis. It might be interesting to know what might have been done further if the patient had lived longer.

DR WRIGHT: Dr Lobban, what was your diagnosis after the operation?

DR LOBBAN: Carcinoma of the ampulla of Vater. This was my impression despite the fact that I could not palpate it and that the probe went through the sphincter without meeting any resistance. I was under the impression that I was pushing the carcinoma forward with the probe. I know of a patient who went to his physician because of gastric pain and was told to have gastrointestinal x-rays taken. These were negative for an alimentary neoplasm. Following the x-ray studies his physician noted the development of icterus which lasted about five weeks before disappearing. Jaundice recurred in four weeks, and the icteric index rose to 180. I saw him at that time and admitted him to the hospital. At operation I found a small tumor of the ampulla of Vater which was freely movable with the duodenum at that point. Inasmuch as the probe went through the sphincter in the present case, I thought there might be a movable carcinoma at the head of the probe and did a cholecystogastrostomy to give her permanent drainage.

DR WRIGHT: In carcinoma of the ampulla of Vater do you expect to find anything in the gastrointestinal x-rays?

DR LOBBAN: Not necessarily.

DR WRIGHT: Is there a satisfactory surgical procedure for removal of carcinoma of the ampulla of Vater?

DR LOBBAN: The operation is usually divided into two stages. The first stage consists of short-circuiting the bile by way of the gallbladder to the stomach, duodenum, or jejunum. Some go further and perform a gastroenterostomy with ligation of the common duct below the junction of the cystic duct. The procedure that I have used consists of an anastomosis between the gallbladder and the jejunum using a relatively long loop. An enteroenterostomy is also performed to short-circuit the jejunal contents below the anastomosis in the gallbladder. It was demonstrated in this case that regurgitation of gastric contents can proceed through the gallbladder down into the common duct if the occlusion of the duct is not complete. Ascending cholangitis is a definite factor in any anastomosis between the gallbladder and the intestinal tract. The second stage consists of division of the duodenum both above and below the tumor area with resection of the

# Medical Relief

## Joint Statement

*From the New York State Department of Social Welfare  
and the Medical Society of the State of New York*

ON the following pages the outline of "Principles and Discussion" represents the position taken by the State Department of Social Welfare (under the Public Welfare Law) in regard to the various medical welfare policies adopted by the House of Delegates of the Medical Society of the State of New York during the past several years. Also included is an outline of Basic Principles of a New Medical Plan, approved by the State Department of Social Welfare, which is now being put into effect by the State Department in various localities. This is the Medical Plan referred to in the discussion below.

The reader is requested to study thoroughly all this material and preserve these pages for future reference.

For the purpose of maintaining orderly, practical, and logical thinking on the subject of medical welfare policies, the following points must be kept in mind. Under the Public Welfare Law, local welfare officials are empowered to provide medical care on a salary basis or on a fee-for-service basis, consequently the indigent patient may not have or may have the right of free choice of physician according to the procedure adopted in any given locality. In addition, if they are to receive reimbursement from the state, their local welfare departments must be operated under the Rules and Regulations promulgated by the State Department of Social Welfare. At present there is no relation between the Workmen's Compensation panel and the care of indigent patients except in a few localities where such a relation has been mutually agreed upon on a trial basis. Any platform adopted by the State Medical Society, or by local medical groups, has no force whatever in effecting the conduct of medical relief work unless agreement can be reached with the state and local departments of welfare concerning this platform. Such agreements, if reached, are essentially mutual understandings and in no sense abrogate any portion of the Public Welfare Law. It should be noted further that the local welfare official is legally responsible, to his community and to the state, for the entire conduct of his department and he can neither delegate nor share this responsibility. He can seek and accept advice or suggestions concerning medical problems

and procedures, but in the final analysis responsibility for all decisions rests solely on him.

In studying the "Principles and Discussion" it will be noted that there is already a considerable amount of agreement on Principles 1, 2, 3, 4, and 7, some of the details of which have to be further worked out from the standpoint of statewide policies. The following portions of the discussion of these principles might well be emphasized. The State Department of Social Welfare agrees that there are advantages in the establishment of a medical advisory committee in each public welfare district and agrees to advocate the use of these committees and to assist in a general determination of their functions. Under the Public Welfare Law, these committees can advise and suggest, and can recommend policies for supervision and administration, but the responsibility for all acts and decisions must remain—and we feel should remain—in the hands of the local welfare official. State reimbursement on a local fee schedule is conditioned upon the State Department's approval of this schedule as being reasonable for the particular community rather than on the basis of a statewide fee schedule. Abolition of the system wherein medical questions are submitted to the State Department for decision is brought about automatically through the introduction of the new medical plan and the "prior authorization" system is transferred to the local agency under local professional control. Considerable study is now being given to the question of medicines and drugs—a few localities having reached a fairly satisfactory solution of this problem—and it can be expected that with local assistance much of the difficulty and criticism will be eventually eliminated. The State Department points out that under the law it cannot guarantee free choice of physician but draws attention to the fact that while in some localities it has been long-standing practice to employ salaried doctors, introduction of the new medical plan has had a tendency to increase consideration of the use of the fee-for-service basis, since provision is made for local medical controls.

Although on the surface there appears to be a wide divergence of opinion concerning

eration or at operation Would a cholangiogram be of help in making a diagnosis?

DR RICHTER I think that is a question for the roentgenologist I do not think it would have been possible in this case A number of cases have been reported with a diagnosis made preoperatively In these other cases the duodenum was dilated The duodenum was not dilated in this case

DR CARTER Would I be justified in curetting the tissue of the ampulla through the common duct for frozen section study?

DR RICHTER In this case and in most of the others we are dealing with an adenocarcinoma, and I think that if the proper specimen could be obtained a diagnosis could be made How much difference is there between this procedure and a resection?

DR CARTER There is quite a difference

between using a curet and doing a resection

DR LOBBAN What was the diagnosis at the autopsy table?

DR RICHTER The true diagnosis was not made at the autopsy table It was made in the laboratory when the sections were examined

DR LOBBAN If I had looked at the ampulla could I have made a diagnosis?

DR RICHTER The ampulla would have been unusually prominent and you would have been suspicious

### Editorial Committee

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### BETTER HEALTH TO REWARD THE DRAFTEES

Improvement in the health of the young men called to military service should result from their period of training, avers Dr Benjamin W Black, president of the American Hospital Association in the *Kiwanis Magazine* For example, a majority of the young men will be better nourished than they were before their military service, because their food will have contained more nearly proper proportions and will be adequate in other vital respects The appetite will improve as the men experience, possibly for the first time in their lives, active physical work and exercise This combined with healthy recreation will prove of great benefit For the first time in the lives of many, regular living habits will replace a much different manner of living and the results will be substantially an indirect benefit to their health

Vaccination against smallpox is generally practiced in the military services, and because of the practice there is no smallpox in the service For those men who have not before been vaccinated or who come from areas where there had been effective agitation against it, vaccination will prove of value from the immediate protection given, but the influence of those men who are protected will prove of value in many home communities as their influence extends, even to their families and the neighborhood After the World War the death rate from typhoid fever in this country dropped very sharply and

was largely attributed to the inoculation against this disease which the men in the army were given It was almost a miracle that practically no typhoid was prevalent in the army even though it occupied a highly infested territory in Europe where typhoid would have been very prevalent had inoculation not been universal as a method of protecting the men from the disease.

Pneumonia complicated many minor communicable diseases such as measles and chicken pox, from which many of the men suffered Its severe effects resulted in a rather high death rate, but now it will be expected to lose many of its severe effects, as there have been more recently developed new methods of combating this terror The mortality from pneumonia has been greatly reduced by the use of sulfanilamide, sulfapyridine, and other allied chemicals, and by the use of serums in selected cases. The mortality from epidemic cerebrospinal meningitis in the new army will be much lower because of the discovery of these new drugs which have proved most effective against this devastating disease

In the event that blood transfusions are required to treat men ill or wounded, better results, or as good, are accomplished by the use of blood plasma It is strange but war is making its contribution to better medicine and war has been responsible for the development of new lifesaving technic

### PUBLIC NOT MADLY ENTHUSIASTIC

Discussing programs for providing medical care which are being tried out by various state medical societies, the *Journal of the American Medical Association* for February 1 says that "One difficulty seems to be common to all these

plans The public is not particularly enthusiastic about prepayment for medical service There is no evidence that the citizens of this country are yearning for any universal compulsory system"

Welfare Law and the regulations of the State Department of Social Welfare make it possible for the indigent patient to choose his own physician and the physician to treat his own patients with payment for his services supplied from public funds. Although the local public welfare official is responsible for providing necessary medical care for indigent persons, the determination as to the medical needs is now

by law "made with the advice of a physician"

JACKSON DAVIS, M D  
*Chief Medical Officer,*  
 State Department of Social Welfare  
 CHRISTOPHER WOOD, M D  
*Chairman,*  
 Subcommittee on Medical Relief  
 Medical Society of the State of New York

## Local Medical Care Plan

### BASIC POLICIES

1 Recognition by public officials, physicians, hospital administrators, and all other professional personnel, of the Public Welfare Commissioner's legal responsibility and authority, within existing appropriations, to provide medical care for all persons, under its care, and for such persons otherwise able to maintain themselves, who are unable to secure necessary medical care

2 Acceptance of principle that the local Medical Program of the Department of Public Welfare should be supplementary to, and involve proper, full utilization of all existing medical facilities, federal and state, as well as local tax-supported and voluntary institutions

3 The establishment of a central unit, with administrative responsibility for the authorization and issuance of medical care, and directed by a full-time or part-time physician, who, in the discretion of public welfare official, may be supported by a Medical Advisory Committee, follows recognition of the fact that sound medical program administration requires

- a Professional medical judgment and controls such as can be given only by a physician
- b Simplified and smoothly operating procedures to effect the referral of patients to physicians for treatment
- c A clearly defined plan for keeping the social service staff informed of health, medical, and medical social treatment needs of their clients
- d. An accounting system.

4. Recognition by public welfare officials and physicians, nurses, hospitals, druggists, and other professional personnel participating in the medical care program, of the value and essential need of detailed written agreements wherever practicable, stating clearly the re-

sponsibilities to be undertaken by each, as well as procedures and financial payments involved

5 Acceptance of responsibility to establish and maintain continuous medical records showing

- a Total treatment costs according to type of service, such as physician's treatment, nursing care, drugs, hospital care, appliances, etc
- b Treatment costs of individual patients
- c Diagnostic and treatment records of each individual patient
- d Administrative costs

Without such recording, no sound analysis of the value and cost of the total medical program can be made, nor can the total medical needs of the individual patients be reviewed and adequately or economically met

6 Acceptance of responsibility for joint planning and periodic case conference between the Medical Unit and the Social Service staff for utilization of physicians to determine medical need and social service to determine financial need for those patients applying to the Public Welfare Department for medical care only

7 Acceptance by the Public Welfare Official of responsibility for preparation of written statement of all medical policies and procedures, contracts, price schedules, etc., copies of which should be available to all participating professional personnel or vendors, to the social service staff, and to all cooperating agencies or institutions in any way involved in the local medical program

8 Whenever feasible, the same plan for providing medical care shall be used for all categories of public assistance in order to obviate confusion to the recipient and medical attendant, and to aid in the simplification of administrative and accounting procedures

### Principles and Discussion

#### 1 THE MEDICAL ASPECTS OF MEDICAL RELIEF SHOULD BE SUPERVISED BY THE MEDICAL PROFESSION

"Medical aspects" include

Limitation of scope of practice for individual doctors

Decision as to when specialist or consultant is necessary

Decision as to use of special clinics

Evaluation of services in terms of fees and charges

Principles 5 and 6, it can be said that the State Department now has a fairly accurate conception of the medical profession's viewpoint regarding these principles. It can be said further that the State Department is not unsympathetic toward these principles but feels that much additional thought and study are necessary, especially with reference to local conditions, before a common ground can be reached. It is entirely possible that, wherever local medical advisory committees really work and function, salaried practice and the overuse of clinics may be found to be increasingly less desirable medically, socially, and economically. This is not to say that the solution of these problems will be merely a matter of simple evolution but rather to emphasize that their solution directly depends upon the amount of thought and consideration given them.

As enumerated below, there are several methods of providing physicians' services. These methods, their costs, and the results obtained vary with the locality, to a considerable extent dependent upon the judgment and experience of the local welfare official and upon the local conditions and need with which he is confronted. However, nowhere in New York State is there a formal, functioning mechanism which integrates and correlates all the services which are provided in a community at public expense. Only by having the complete picture, especially regarding total individual costs, can the appropriating bodies, the welfare officials, and the medical care professions cooperate to the end that the medical needs of the individual and the community are met efficiently as well as economically.

To provide the services of a physician, one or more of the following methods are commonly used:

- 1 Employment of physicians on a fee-for-service basis, either giving the patient free choice of physician or limiting the choice to a selected panel of physicians
- 2 Use of public or private clinics
- 3 Employment of salaried staff physicians to treat patients in their offices and in the patient's home, with specialists' services on a fee-for-service basis
- 4 Employment of salaried staff physicians to treat patients in the patient's home, or in a clinic
- 5 Employment of salaried physicians by a city department of health for services in the home or in clinics, with or without supplementation of this service by

employment of general physicians and specialists on a fee-for-service basis when needed

- 6 By any combination of the above methods

Concerning the appointment of a physician as a medical director or medical consultant and concerning the formation of local medical advisory committees, the State Department of Social Welfare makes the following recommendations to local welfare officials:

"The attention of the local public welfare official is called to the value of securing the full cooperation of his county medical society in the development of an approved local medical program and in the selection of a competent physician to act as Medical Director or Medical Consultant on his staff. The State Department recommends that he request the medical society covering his public welfare district to submit a list of physicians recommended by the society as suitable for such appointment and meeting the requirements established by the State Board of Social Welfare, or request the medical society to comment upon the qualifications and professional standing of a licensed physician selected by him as a candidate for appointment as Medical Director or Medical Consultant. Attention is called to the value of an active professional advisory committee in providing the local public welfare official with professional advice in the development and revision of the policies included in the approved local medical program, in the arbitration and discipline of professional problems and the operation of survey boards to review and plan proper medical care for persons suffering from prolonged or disabling illnesses or presenting special or unusual medical needs. The medical advisory committee should be appointed from a list nominated for the purpose by the county medical society. Where deemed advisable this committee may be expanded in the same way to include representatives of other professions, institutions, and laymen."

In conclusion, it should again be emphasized that under the law, the welfare patient is not guaranteed the right to choose his own physician, and the physician is not guaranteed the right to treat his own patient with a commitment of payment for his services. But, if the physicians of a given locality can agree among themselves to formulate and to participate seriously in a plan adapted to the medical needs and medical and economic resources of their community, the Public

the conditions established by themselves in their own plan.

As to drugs the State Department is not as yet ready to change its regulations, especially concerning the use of proprietary drugs. The Department feels that any change in this connection can only be made after a sufficient number of medical plans have been submitted, therein indicating the opinions of the local welfare agencies and local medical groups as to what constitutes a reasonable policy in connection with special drugs and special modes of therapy. It is not likely that this determination can be made for at least another six months.

#### 4 FREE CHOICE OF PHYSICIAN SHOULD BE GUARANTEED SUBJECT TO PROTECTIVE LIMITATIONS

As in Workmen's Compensation practice, panels of participating physicians should be established. Each physician will be bound by the scope of practice for which he has applied, subject to the approval of local authorizing boards.

Any client needing care will go to, or call, his own physician who will care for the patient under the usual conditions of private practice, except that (1) If the patient suffers from a condition outside the physician's scope of practice, he will refer the patient elsewhere, and (2) If the patient fails to qualify for medical aid through the Welfare Office, the physician will continue to treat the patient as a private patient.

#### Discussion

It was pointed out by the Department that in the majority of communities a system of free choice of physician on a fee-for-service basis is used by the local welfare agency. Wherever this system is used, each of the articles of this principle should be met.

However, the Department pointed out that it has neither the power under the Public Welfare Law, nor does its experience to date indicate the need, to mandate communities to the extent that they must use the fee-for-service system rather than salary or contract. It is the major responsibility of the Department to see that the scope of the program provides adequate service, of high quality at reasonable cost to the taxpayers. Wherever the local program fails to meet these requirements, the Department will insist that necessary changes be made regardless of whether the fee or salary basis is used. It is felt that for the Department to mandate one way or the other would introduce "State Medicine" to the fullest extent. It was explained that while it has been a long-standing practice in some localities to use salaried doctors, introduction of the new medical plan has had a tendency to swing communities over to the fee-for-service basis.

#### 5 CONTRACT PRACTICE FOR MEDICAL RELIEF SHOULD BE DISAPPROVED

Contract practice is disapproved because

- 1 From the standpoint of public policy it establishes a political control over medical practice.

Establishes a type of service radically different and divorced from the private service available to the general population.

Adulterates the direct legal liability of doctor to patient, the main protection of the individual against incompetence and negligence.

Promotes pauperization of the people by its natural tendency to perpetuate political jobs and extend "free" services.

#### 2 Medical Policy

Choice of physician, if properly controlled for protection of patient, has definite therapeutic value.

Most competent physicians will not participate in contract plan.

Tendency is to give as little care as possible because of lack of usual incentives.

Inevitable overhospitalization under contract plan makes economy an illusion.

Cheapens medical service, viewing it as a commodity.

Gives free rein to malingering, and produces growing demand for attention to trivial conditions, at the expense of adequate attention to serious conditions.

#### 3 Ethical Policy

Directly contrary to and incompatible with the primary ethical principles that have maintained the professional status of the physician, improved the effectiveness of his service, and protected the patient against charlatanism, incompetence, and negligence.

Participation by a member of the profession compels him to violate some of these ethical provisions.

#### Discussion

The Department cannot agree to this principle for the reasons stated under Principle No. 4. It is quite obvious that if the Department finds the quality of care in a local community effected by and to the extent enumerated in Items 1, 2, and 3, under Principle No. 5 and these conditions traceable to the use of salary or contract doctors, the Department would in its normal supervisory role insist upon a change in the system.

#### 6 CLINICS SHOULD NOT BE EXPLOITED TO AVOID PAYMENT OF FEES FOR SERVICE. THEY SHOULD BE USED WHEN MEDICALLY DESIRABLE

Clinics are largely staffed by private physicians receiving no remuneration for clinic services.

When ambulatory cases are sent to hospital clinics for care that could equally well, or better, be given by a private general practitioner in his office,

- (1) The clinic is unnecessarily burdened, cutting down the time available for attention to each case.
- (2) The clinic physician is unnecessarily exploited for service to public charges.
- (3) The patient is deprived of the right to be attended by his own physician.

Decision as to whether medical care is needed, or when it should cease

Decision as to drugs and appliances

"Supervision" defined

Above matters should be under *effective* control of the medical profession by

- 1 Medical society committees
- 2 Full-time medical supervisors, nominated by or approved by medical societies
- 3 County and State medical advisory boards

*Actual ruling* should be made by local, county or state Welfare Commissioner, but no ruling on a medical question should be made in absence of a definite recommendation by the medical board or supervising physician

## Discussion

"Medical Aspects"

It was agreed that under the new medical plan the determinations as to limitation of scope of practice and use of special clinics should be made jointly by the local welfare agency and the local professional committee. It was agreed that the other decisions included in "Medical Aspects" would be made by the medical director or consultant of the local agency with or without the advice of a professional committee

"Supervision"

It was agreed that in taking cognizance of the responsibilities of a public welfare commissioner as outlined in the Public Welfare Law, the departmental medical program must be "supervised" by the commissioner and his medical director. A local medical committee should not have any supervisory or administrative *responsibility* for the program. It was agreed, however, that an "advisory medical committee" should be established in each public welfare district and that this committee should act in an advisory capacity only. It was agreed also that no ruling on a medical question should be made by a local welfare commissioner in the absence of a definite recommendation by the medical director or the medical advisory committee. The State Department of Social Welfare agrees further to advocate the use of these committees, and the exact manner in which they should function will be outlined in a document to be prepared jointly by the Department and the State Medical Society

## 2 ALL PHYSICIANS SHOULD BE ENCOURAGED TO PARTICIPATE IN THE SERVICE

By abolition of statewide fee schedule and substitution of local schedules, established by mutual consent of local county medical societies and local welfare officers, within limits prescribed by State Department of Social Welfare

By more liberal, but definite, provision for engagement of specialists, and consultants, when needed, in the opinion of the attending physician

By reduction of red-tape and reporting and billing mechanisms to the minimum

By complete elimination of lay interference or dictation in medical matters

## Discussion

Under the new medical plan, local fee schedules are prepared by the Welfare Commissioner with the aid and cooperation of his medical director and professional advisory committee. State reimbursement is conditioned upon the State Department's approval of a local fee schedule as being reasonable for a particular community rather than on the basis of a statewide fee schedule

The exact manner and circumstances, in which specialists and consultants are to be engaged, are incorporated as part of the local medical plan. As this plan is developed jointly by the local department, the State Department and the local medical groups, it is to be expected that in each instance this policy can be handled to the satisfaction of all

Reduction of red tape has already been accomplished through the introduction of a new form which abolishes the former system of a separate bill for each patient and now permits billing on one form for all patients treated in one month

It was agreed that the State Department's requirement, that a medical director or consultant be engaged wherever the plan is put in operation, would reduce lay interference in "medical determination" to a minimum. It was pointed out, however, that the welfare commissioner is a layman who has sworn responsibilities which he may not renounce—including the authorization of welfare commitments—and that, while it is agreed that in medical matters he should have the advice and guidance of a medical director and/or committee of professional men medically competent, the responsibilities for decision must remain squarely on the shoulders of the commissioner and may in no sense be eliminated or considered as "lay interference"

## 3 UTMOST DECENTRALIZATION OF CONTROL IN MEDICAL MATTERS

Local supervising physicians or society boards should be able to rule on use of special drugs, use of consultants and specialists or any other special treatment, without reference of these questions to State Department of Social Welfare

Local welfare officers should have full authority to order special drugs and authorize special modes of therapy, with assurance of reimbursement to themselves, if approved by local supervising physician or society board

## Discussion

Abolition of the system wherein medical questions are submitted to the State Department for decision is brought about automatically through introduction of the medical plan. It was pointed out that wherever the plan is installed and approved by the State Department the "prior authorization" system is transferred to the local agency under local professional control. Under the new system professional members of the State Department staff will periodically examine the records of local agencies to determine whether or not the agency is adhering to

# Maternal Welfare

*From time to time under this heading articles will appear on obstetric subjects which are deemed of importance as aids to improvement of maternal welfare in New York State. The members of the committee are Charles A. Gordon, M D, chairman, James A. Quigley, M D, and Ferdinand J. Schoeneck, M D*

## Infected Abortion

There can be no question that the conservative methods of handling frankly or potentially infected abortions give better results than any method that calls for active invasion of the generative tract. A few recent reports have advocated evacuation of the contents of the uterus in these cases—this practice must be condemned, since such procedure may convert a localized infection into a generalized one.

The treatment of infected abortion should include two phases—namely, supportive and medical. The recent advances in chemotherapy have greatly enhanced the handling of such cases, but we cannot depend entirely on this type of therapy to the exclusion of supportive treatment.

Patients with infected abortion should be put at absolute rest, and the head of the bed must be elevated to facilitate drainage. If the uterine contents have been passed or there is evidence that the abortion is incomplete or in progress, an ice bag should be placed over the lower abdomen and ergotrate given. It is essential that a vaginal swab culture should be taken to determine the offending organisms, and, likewise, a blood culture should be taken.

If the patient is bleeding, it is permissible to insert a vaginal speculum under strictly aseptic conditions. If the products of conception are extruding from the external os of the cervix, they may be removed with an ovum or sponge forceps and a culture taken from the cervix. However, the uterine cavity should not be invaded. If the bleeding is such as to actually endanger the patient's life, it may be necessary to insert a tight vaginal pack. This pack should be removed in twelve hours, at which time any retained products will usually be passed spontaneously.

It is advisable to start adequate sulfanilamide therapy immediately. Most of the severe infections will be found to have the beta hemolytic streptococcus as the organism involved. Sulfanilamide therapy should be continued until the culture reports are obtained. Consequent therapy will depend on the type of bacteria isolated.

If the blood, vaginal, or cervical cultures show beta hemolytic streptococci, the sulfanilamide therapy should be continued. The aim should be to keep the blood concentration of the drug as near 10 mg per hundred cubic centimeters of blood as possible. In view of the many reported complications following this type of therapy, the patient must be observed most carefully. Daily concentration determination, complete blood counts, and urinalyses are necessary during the initial active treatment. Any signs of untoward effect of the medication must be given due consideration.

If staphylococci or gonococci are isolated, sulfathiazole is indicated. Little is known as to the effect of these drugs on anaerobic organisms. If this type of bacteria or some other aerobic bacteria is found, it is probably advisable to give sulfanilamide a therapeutic trial.

The patient should receive the best possible nursing care. Proper fluid intake must be obtained by means of hypodermoclysis or the intravenous route if necessary. Unquestionably, the most important phase of the supportive treatment is repeated small blood transfusions. Every second day 250 to 300 cc of blood should be given. If the patient shows signs of definite blood loss, the initial blood transfusion should be at least 500 cc.

A word should be said about the legal aspect of these cases. If there is any question whatsoever about the abortion having been induced, the physician is obligated to report the case to the District Attorney's office. This is sometimes a rather perplexing problem, since the very character of these cases often makes such procedures embarrassing. Certainly, if the condition of the patient is such that her exodus is anticipated, the District Attorney must be notified at once, since a death-bed statement is of paramount importance in prosecuting the criminal abortionist.

Conservative handling of infected abortion, combined with proper chemotherapy and repeated small blood transfusions, will give excellent results in most of these cases.

## Postgraduate Obstetric Education

Several postgraduate obstetric courses have been announced in conjunction with the statewide program of the Maternal Welfare Committee.

April 3, 1941, Syracuse, College of Medicine, Obstetric Teaching Day, District 8, Onondaga,

Oswego, Oneida, Madison, Cortland, and Cayuga counties, Dr E C Hughes, regional chairman.—At the afternoon session the speakers will be Drs. Elliott Bishop and Jesse Wallace, of Brooklyn, Dr S B Blakely, of Binghamton, and Dr M C Hatch, of Syracuse. Dr Charles Gordon,

- (4) The clinic physician or his colleague in the community is deprived of a nominal office fee which would help him pay his taxes

General cases should be sent to general practitioners in the community, especially where the patient expresses preference for a certain physician.

There is no need for a general medical clinic in the relief program

Special clinics should be used wherever a private physician wishes to refer a patient for diagnostic examination or specialized treatment

The hospital outpatient department should be used as a diagnostic center and treatment auxiliary, by the private physicians, not as a catch-all for every sort of case

### Discussion

The program of the State Department of Social Welfare supplements and does not duplicate or substitute for existing facilities. The establishment, expansion, and scope of service of local clinics are determined solely by local government officials. The Department feels that where such services infringe upon or exploit the local medical group, this is a matter for arbitration between local officials and professional groups, and not subject to state interference

With the establishment of the local medical plan, the Department has no choice but to insist that existing clinics and other medical resources be used to the fullest, *reasonable* extent. The department does not, however, insist upon the use of such resources where they fail to meet the purpose for which they were established. In determining jointly with the local welfare agency the extent to which clinics

and other resources shall be used, the Department takes into consideration the quality of service, the scope of service, the physical facilities, and the ability of the clinic to handle qualitatively, as well as quantitatively, the number of cases to be referred by the local welfare agency

### 7 PROVISIONS SHOULD BE MADE TO ENABLE NEEDED MEDICAL CARE TO BE FURNISHED FOR INDIGENT AND NEAR INDIGENT FAMILIES NOT OTHERWISE ELIGIBLE FOR RELIEF

"Medical indigency" should be defined.

### Discussion

Provision for near indigent families is made through the Public Welfare Law, Section No 85, Responsibility for Providing Medical Care. "The public welfare district shall be responsible for providing necessary medical care for all persons under its care, and for such persons, otherwise able to maintain themselves, who are unable to secure necessary medical care." L 1940, Chapter 682 modified this section by adding, "The determination as to medical care necessary for any person shall be made with the advice of a physician"

It was pointed out that in actual practice and in conformity with this section of the law, local welfare agencies make available to persons not on public assistance such medical care as is required. The medical director and medical advisory committee under the new plan can be of great assistance to the commissioner of public welfare in the interpretation of the medical needs of persons not on public assistance. Under the procedure of the State Department, reimbursement on all such medical care is granted by the department

## THE LOCAL MEDICAL SOCIETY

The function of a medical society, as I see it, is to furnish a common meeting place for the discussion and interchange of knowledge and ideas among the members of our profession which should ultimately lead to the betterment of conditions of health and medical practice, through the increase in interest in and understanding of each other's problems and perplexities. This concept applies whether the gathering be a small local county group, or a national or sectional assembly such as this. When any of us attends such a meeting, our presence implies a dual role. We come to exchange ideas, to discuss problems, to give and to take, to teach and to learn. In so doing we not only stimulate our own interest and increase our own store of knowledge and effi-

ciency, but also, by our active participation, we become a teacher insofar as we stimulate our colleagues in like manner. The experience gained in preparing and presenting a paper, however simple, may stand us in good stead at some future time, and its content may furnish just the help that some professional brother was seeking to solve some problem of his own. Your local medical society can become an active, useful postgraduate school, and you a valued member of its faculty, if you will but grasp the opportunity that offers for the taking.—J M T Finney, Jr, M D, Chairman's Address, Section on Surgery, Southern Medical Association, Thirty-Fourth Annual Meeting, Louisville, November 12-15, 1940

## THE GREATER AGONY

"I understand," said a friend once to a doctor, "that Green is a martyr to chronic indigestion"

"No," replied the doctor, "he has indigestion all right, but it is his wife who is the martyr"

—*Southern Medicine and Surgery*

## LIMBERING UP THE ELBOW

A banker friend of a friend of ours is a victim of occasional rheumatic attacks. He was saying to an acquaintance he wished he knew how to avoid getting stiff in the joints. "Stay out of them," the other advised

—*Ill Med J*

# Medical News

## Albany County

Dr Clay Ray Murray, of Physicians and Surgeons, New York City, spoke on "Problem Fractures About the Elbow Joint" before the county society on February 26. Dr Foster Kennedy is scheduled to address the society in March and Dr Cary Eggleston in April.

## Bronx County

The program of the county society on February 19 was as follows: (I) Executive Session, (II) "The Hospital and the Community," by Dr Frederick MacCurdy, president, New York State Hospital Association, with discussion by Mr William B Seltzer, superintendent, Bronx Hospital, and Dr Jack Masur, superintendent, Lebanon Hospital, (III) "The Present and Future Status of Private Medical Practice," by Dr Harry Projector, with discussion by Dr Milton J Goodfriend.

The topics and speakers at the meeting of the Bronx Pathological Society on February 18 were: (A) Case Presentations—(1) "Cystosarcoma Phylloides of the Breast," by Dr Herman Scholnick, and (2) "Metastatic Malignant Melanoma of the Breast (2 Cases)," by Dr Bernard Lapan, (B) Paper of the Evening—"The Pathology and Etiology of Mammary Cancer," by Dr Charles F Geschickter.

The North Bronx Medical Society met on March 6 at Elmsmere Hall and listened to the following addresses: (1) "Lymphoblastoma," by Dr Samuel Feldman, (2) "Jaundice Following Sulfanilamide Therapy," by Dr Benjamin Diamond, (3) "Toxic Adenoma of Thyroid and Prostatic Hypertrophy Treated with Radium and X-Ray," by Dr Solomon Ginsburg, (4) "(a) 'Winged' Scapula with Unusual Complications and (b) Subdeltoid Bursts," by Dr Howard Gordon, and (5) "Carotid Sinus Sensibility," by Dr Nathan Savitsky.

## Chautauqua County

Medical and surgical supplies, valued at about \$3,000 and donated by members of the Jamestown Medical Society, were packed and shipped to Britain on February 13.

Approximately forty-five members of the society, as well as the Jamestown General and W C A. hospitals, joined in making contributions. All were collected within a week, Dr James M. Steele, chairman, said.

## Erie County

A change in the health program of the United States is necessary for a better defense, Dr Samuel J. Kopetzky, of New York, chairman of the medical preparedness committee and president-elect of the State Society, told the county society on February 17 in Hotel Statler, Buffalo, as reported in the *Buffalo Evening News*.

"The medical profession," he said, "holds key positions all over the country in determining the deficiencies of the draftees. There is a change needed for the health of the people and this doesn't mean muscularization. They aren't any good in the Army or Navy if they can't see or chew. It is up to us to reason out a health-

education program, and this must start in the primary grades.

"There is no greater concern for any government than the health and environment of its people. In such a program we need the cooperation of the associations of dentists, nutritionists, optometrists, and education."

Commending the local group's efforts in behalf of military training for Medical Reserve officers and other cooperation with Selective Service training, Dr Kopetzky said that the national Medical Association decentralized its medical preparedness committee "after sensing the trend of the legislative acts in Washington." The national group, he said, asked each state society to set up its own such committee, and this in turn was turned over to the county groups.

Upon recommendation of the medical preparedness committee of the local group, the Comitua Minora will sponsor a course of military instruction for Medical Reserve officers of this district in Alumni Hall of the University of Buffalo School of Medicine, Dr Nelson W Strohm, president, announced. Sessions will be held weekly under Lieut Col Sherlock A. Herck, executive of the Buffalo Military District, and Major Austin P Higgins. Dr Strohm said that 1,276 letters have been sent to doctors in the Buffalo area relative to the course.

Because of a disagreement between the Erie County Welfare Department and the Buffalo City Health Board on an interpretation of the State Public Welfare Law, the health board has referred the dispute to the county medical society.

Three local hospitals, Children's, General, and Meyer Memorial, are seeking payment of bills for the hospitalization of indigent persons suffering from communicable diseases. The county department contends the city is responsible for payment of the bills, and the health board, in turn, contends the responsibility for payment rests with the welfare department.

Dr Herbert H. Bauckus, health board chairman, declared the welfare department was seeking to evade its responsibility. His motion recommending the aid of the medical society was approved.

The section of pathology of the Buffalo Academy of Medicine held a joint meeting on February 26 with the Western New York branch of the National Gastroenterological Association and heard a paper on "Pathologic and Clinical Aspects of Cholecystitis," by Dr Anthony Bassler, president, National Gastroenterological Association.

On March 5 the section of surgery listened to an address on "The Importance of Restoration of Function Following Fractures of the Humerus," by Dr J Paul North, Philadelphia. On March 12 the section heard an address on "The Management of Bronchial Asthma," by Dr Harry Wilmer, Philadelphia.

## Herkimer County

Dr Charles Peckham, Bassett Hospital, Cooperstown, addressed the county society on February 11, in the Mohawk Valley Country

chairman of the Maternal Welfare Committee, will give a demonstration of the functioning of the Obstetric Conference. Exhibits of colored moving pictures, the conduct of a follow-up clinic for toxio patients, and a home delivery service are planned. There will be a dinner at the Hotel Onondaga at which the speaker will be Dr W E Studdiford, New York City. A showing of a colored motion picture will follow.

April 9, 1941, Rochester, University of Rochester Medical School and Rochester Academy of Medicine, Obstetric Teaching Day, District 10, Monroe, Orleans, Wayne, Livingston, Ontario, Yates, and Seneca counties, Dr W L Ekas, regional chairman.—The program, at 3 00 P M, will be as follows: "Blood Plasma, Transfusion, etc.," Dr Earle B Mahoney, "Analgesia," Dr James K Quigley, "Manikin, Treatment of Posterior Positions," Dr R. N Ritchie, "Episiotomy," Dr Shirley Snow, Jr., "Emergencies of the Third Stage," Dr Karl M Wilson, and "Breech Delivery," Dr J B Loder, with a demonstration of the functioning of the Obstetric Conference. A dinner will be at the University Club at 6 30 P M, and at 8 45 P M Dr F J Schoenck will talk on "Normal Labor, Sepsis, Intercurrent Disease."

April 10, 1941, Watertown, meeting of county representatives and postgraduate education program, District 7, Jefferson, Lewis, Herkimer, and Hamilton counties, Dr James L Crossley,

regional chairman.—Demonstration of functioning of Obstetric Conference will be given. Plans for the remainder of the programs have not been completed.

Plans are also under way for a meeting of District 4. This district includes Schenectady, Fulton, Montgomery, Schoharie, Greene, and Ulster counties, with Dr W M Mallis as regional chairman. The date is tentatively set for late March. Dr Charles Gordon will arrange the program, which will include a demonstration of the functioning of the Obstetric Conference.

Invitations to these teaching days will be sent to all physicians in the counties included in the districts. However, any one interested in these programs is cordially invited to attend. Additional information may be obtained by communication with the regional chairman of the district.

A course of obstetric lectures will be presented to the Tioga County Medical Society under the sponsorship of the Council Committee on Public Health and Education. These lectures will be presented Wednesday evenings starting March 26, 1941, and will continue weekly until April 23, 1941. Meetings will be held alternately at Waverly and Owego. The course will be given by members of the obstetric department of the College of Medicine, Syracuse University.

## Public Health News

### Distribution of Sulfathiazole by New York State Department of Health

**S**ULFATHIAZOLE has been accepted by the Council on Pharmacy and Chemistry of the American Medical Association and, in addition to sulfapyridine, is now available through the New York State Department of Health to registered doctors of medicine and hospitals for the treatment of pneumococcal infections in patients for whom the purchase of the drug would be a hardship.

The drug is supplied in packages of 60 tablets (0.5 Gm. each) and may be obtained from the same laboratory supply stations and in the same manner as sulfapyridine. (See page 302, NEW YORK STATE JOURNAL OF MEDICINE, February 1, 1941.)

## MEDICAL RACKETEERS

Medical racketeers, ranging from the one wherein persons representing themselves as Federal agents seek to obtain "excess supplies" or other supplies of narcotics from doctors and particularly the relatives of deceased doctors to the familiar ones pertaining to the collection of doctors' accounts, are heard of from time to time. Word has come from Colorado that a medical racketeer is presently working in that state.

The person represents himself as a buyer of second-hand medical and dental equipment, reports the *Journal of the Kansas Medical Society*. He proceeds to obtain the confidence of physicians and offers to buy obsolete and unused equipment. He then explains that check and payment will be issued by his company and leaves with the instruments and is not heard from again.

**Oneida County**

Dr Albert D Kaiser of Rochester University addressed the Utica Academy of Medicine on February 20 on "Relation of Tonsils to Infection in Children," and Dr Charles Hutchings of Marcy Hospital spoke on "Rabillon in Therapeutics."

Dr T P McGill of Cornell Medical School will be guest speaker before the Academy on March 20. His subject will be "Influenza."

**Ontario County**

Members of the Canandaigua Medical Society were entertained at the residence of Dr Malcolm R. Blakeslee on February 13. The speaker was Dr Ovid Pearson, of Canandaigua.

**Queens County**

Members of the county society on February 25 listened to a paper on "Endometriosis," by Dr Robert D Mussey of the Mayo Clinic.

The Friday Afternoon Talks on March 7 and 21, at 4.30, are "Surgical Conditions in Infancy and Childhood," by Dr Carl H. Laws, pediatrician, Long Island College Hospital, consultant pediatrician to Mary Immaculate, Lutheran, and Coney Island hospitals, "Diagnostic and Therapeutic Aspects of Sterility," by Dr Samuel L. Siegler, gynecologist, Brooklyn Hospital, obstetrician and gynecologist, Brooklyn Women's Hospital. The latter lecture will include an interesting exhibit of the essential apparatus, instruments, prepared microscopic slides, and animals used in the investigation of sterility.

Dr August W F Westhoff, of Richmond Hill, marked his fiftieth anniversary in medicine on February 20 at a testimonial dinner given by 200 of his colleagues and other friends, held in the Essex House, Manhattan. It was a tribute to Dr Westhoff's thirty years of service with the Wyckoff Heights and Bethany Deaconess hospitals.

**Richmond County**

The common cold, pneumonia, and other respiratory ailments were discussed at an open

meeting on February 25 in the auditorium of the Richmond Health Center, St George.

Dr Herbert A. Cochrane, president of the county society and attending physician at St Vincent's Hospital, spoke. A film illustrating discoveries by medical science in the study of these diseases was shown by the Health Department.

**St. Lawrence County**

Dr Orton E White was elected president of the Massena Physicians' Association at a meeting on February 9. Dr Philip Mardon was elected secretary, Dr R. F. McAloon, treasurer.

The physicians met to organize a club and to discuss the drive for raising funds for the Massena Memorial Hospital Association. They went on record as unanimously favoring the hospital and approved the Romeo property as the site selected.

**Saratoga County**

Members of the county society spent an interesting day in Saratoga Springs on February 12, beginning with inspection of the research department of The G F Harvey Company, manufacturing chemists, and concluding with a visit to the new drink hall of Saratoga Reservation.

After leaving the laboratory the business meeting of the society was held at the Saratoga Hospital, with Dr Gilberto S. Pesquera, recently elected president, in the chair.

In the scientific program, arranged by Dr T J Goodfellow, members of the hospital staff presented a pneumonia series treated by chemotherapy.

Treatment of lymphogranuloma was discussed by Dr F J Ressegue.

The health motion picture, "Bobby Goes to School," also was shown.

Members were dinner guests of the hospital staff at the Nurses Home.

**Schenectady County**

The county society met on March 4 at Ellis Hospital and heard a paper by Dr Ellis Kellert on "Disease Patterns in Dermatology."

**Deaths of New York State Physicians**

Name	Age	Medical School	Date of Death	Residence
Thomas F Carroll	67	Harvard	February 7	Bronx
Edward Clark	87	Buffalo	February 28	Buffalo
Daniel E S Coleman	68	N Y Hom	February 27	Manhattan
Walter C Cramp	62	P & S N Y	February 18	Manhattan
Frank E Goldstein	49	Syracuse	February 20	Syracuse
M Charles Gottschaldt	81	N Y Univ	February 25	Manhattan
John E Herrity	64	Yale	February 17	Manhattan
William E J Kirk	64	L I C Hosp	February 19	Manhattan & Saranac Lake
DeWitt C MacClymont	65	Bell	February 17	Northport
John J MacPhee	80	Vermont	February 18	Manhattan
James P Marsh	78	Albany	February 23	Troy
Ransom S Moscrip	66	Albany	February 9	Whitney Point
George F Mills	66	Buffalo	February 15	Oneida
Elmer E Reichard	74	Albany	February 18	Averill Park
Henry J L Schroeder	67	L I C Hosp	February 13	Brooklyn
Charles A. Shultes	72	Albany	February 14	Preston Hollow
Morris M Sweeney	60	P & S N Y	February 24	Manhattan

Club, on "The Prophylaxis and After Treatment of the Toxemias of Pregnancy"

The unjust criticism, which, it is felt, has been made of the doctors who are serving as examining physicians under the selective service act, was the subject of lively discussion at the meeting, as reported in the local press

In discussing the situation, most of the medical men felt that the members of their profession who are performing the gratis, patriotic service are being unjustly subjected to criticism on the part of the general public because of the number of men who are passed locally and then rejected at the induction centers. As previously pointed out, it is through the use of x-rays and similar costly equipment that defects, not discernible here, are detected at Albany. The society also proposed that examining physicians be paid

#### Jefferson County

The county society met at the Black River Valley Club on February 13 with dinner at 6 30. Dr Paul H. Garvey, chief neurologist at the Strong Memorial Hospital, Rochester, spoke on "Diseases of the Nervous System"

#### Kings County

"Our Need for a New Building" was discussed at the executive session of the county society on February 18. At the scientific session the members heard an address on "The Management of Injuries of the Hand," by Dr Henry C Marble, of Boston.

The speakers and subjects of the coming Friday Afternoon Lectures at the MacNaughton Auditorium at 4 30 are as follows: March 21—Dr Charles Mazer, Philadelphia, "Menstrual Disorders and Sterility" (motion pictures will be presented with this lecture), March 28—Dr Priscilla White, Boston, "The Diabetic Child", April 4—Dr Frank Bethel Cross, Brooklyn (subject to be announced next month), April 11—(Good Friday—no lecture), April 18—Dr Benjamin Kramer, Brooklyn, "The Uses and Abuses of Vitamin D Therapy", April 25—Dr James S. Greene, New York City, "Speech and Voice Disorders, a Medical Problem."

The Round-Table Therapeutic Reviews, held at the MacNaughton Auditorium on Mondays at 4 30, will have the following speakers and topics: March 17—Dr Edwin P. Maynard, "Treatment of Angina Pectoris and Coronary Thrombosis", March 24—Dr John H. Crawford, "Treatment of Congestive Heart Failure", March 31—Dr Joseph C. G. Regan, "Sera and Vaccines in the Prevention and Treatment of Contagious and Infectious Diseases", April 7—Dr Matthew Walzer, "Treatment of Hay Fever and Asthma", April 14—Dr Fedor L. Senger, "Treatment of Infections of the Urinary Tract", April 21—Dr Marion B. Sulzberger, "Treatment of the More Common Skin Diseases", April 28—Dr Charles Solomon, "The Use and Abuse of Hypnotics and Sedatives."

Dr Joseph Glamkowski has been chosen president of the North Brooklyn Medical Society

The Williamsburg Medical Society met on March 10 and heard a paper on "Jaundice" by Dr Reginald Fitz, of Boston

The Doctors' Club of Brooklyn held its annual dinner-dance at Pierre's, New York, January 11, 1941. Among the guests was the English Consul who was presented with an emergency kit as a gift from the Doctors' Club to the English Army. The occasion of the dinner-dance was the installation of the new officers of the club—president, Dr Ira Mensher, vice-president, Dr Karl Kaplan, secretary, Dr Siegfried Block, and treasurer, Dr Ehas Reed. Chairman of the Dinner Committee was Dr Reed. There was dancing and entertainment. About 250 people were present.—Reported by Siegfried Block, Secretary

#### Monroe County

The county society, as reported in the Rochester papers, has refused to accept the responsibility for the sending of unfit draft selectees to Army induction stations, although some of the selectees rejected by Army medical officers claim they were sent home facing embarrassment and financial sacrifices

In a resolution adopted at a meeting of the society's governing board, the group declared that it is "not assuming the responsibilities for any of the details of administering the Selective Service Act unless specifically requested to do so by proper authority"

Further, the board sidetracked a proposal that the society take the initiative and call a conference of local board examining physicians and Army medical officers to clarify the civilian doctors' views of Army physical regulations.

To replace Dr John J. Rooney, treasurer, who has left the city, the board elected Dr Willard H. Veeder

"Painful Feet and Aching Back" was the subject of the fourth of a series of illustrated public lectures on February 23 at the Rochester Academy of Medicine. Dr R. Plato Schwartz and Dr Carl T. Harris were the speakers

The series is being held under sponsorship of the Academy of Medicine, the county society, and the University of Rochester School of Medicine. Dr Sol C. Davidson heads the committee in charge

#### Nassau County

The county society held a dinner-dance to celebrate its twentieth anniversary on February 21 at the Garden City Hotel. The net proceeds were given to the society's benevolent fund

#### New York County

The following scientific program was presented at the meeting of the county society on February 24: (1) "Some of the Medical Problems of the Chemical Warfare Service," by Lt.-Col. M. E. Barker, Chemical Warfare Service, Washington, D. C., by invitation, (2) "The Doctor's Relation to Aviation," by Dr Samuel M. Strong, Flushing, New York, by invitation, (3) "Mental Hygiene Aspect of the Deferred Draftee," by Dr Lowell S. Selling, director, Psychopathic Clinic, Recorder's Court, Detroit, by invitation.

Dr Bret Ratner was a guest speaker at the fifty-sixth Annual Session of the Mid-South Postgraduate Medical Assembly, Memphis, Tennessee, February 13. His subject was "The Asthmatic Child"

Albany and Washington was brought before an interested audience by Mrs Albert Vander Veer II, state chairman of legislation. A tea was given in her honor at the home of Mrs W F Smith, president. This meeting afforded the members an opportunity which has long been desired.

**Kings.** A varied program that included a talk by Dr Adele E Streeseaman, chairman of the advisory council, a descriptive lecture by Mrs Lewis P Addoms on "The Motion Picture Council", and a book review by Mrs C A. Peake gave the February assemblage of doctors' wives an afternoon of worthwhile entertainment. A business meeting and social hour were also part of the program. Mr E A. Griffin has donated a very beautiful piece of needlepoint to be sold, the proceeds of which will be used for the Physicians' Home, Incorporated.

**Montgomery.** So successful was the dinner party held at the Elk's Club for the physicians and their wives that it was unanimously decided to make this an annual event. A delightful program of exhibition dances was followed by games and cards. Mrs Martin F Geruso and her committee deserve commendable recognition for their efficient work.

**Onondaga.** At a recent meeting Mrs C G Murdock, program chairman, introduced Dr

E E Van Duyn, of Syracuse, who spoke on medical preparedness. He is directing medical defense work in Onondaga County and is outlining a complete organization of the army unit. The importance of nursing and Red Cross work were stressed.

**Queens.** About fifty members attended the first regular monthly meeting held at the Society Building in Forest Hills on January 28. Mrs Thelma Lippe reviewed several Broadway plays. Her charm and personality delighted her audience. Five new members were admitted to the auxiliary. Over four hundred attended the luncheon and bridge held at Pierre's on February 5. A delicious luncheon, beautiful prizes, and a delightful atmosphere made an afternoon long to be remembered. A vote of thanks goes to Mrs Edward Veprovsky and her committee for the successful as well as financial result of their work. The second series of teas took place at the home of Mrs Alfred Angrist, of Jamaica, on February 18. Mrs William Lavelle, of Long Island City, introduced at the regular February meeting the speaker of the evening, Mr Alfred Dickson. His topic was "Speech, the Most Valuable Implement of Man." Mr Dickson is in charge of the speech department of Sarah Lawrence College, and the producer and director of the "Theatre of the Air" on Station WOV.

Dr William S Ladd, dean, Cornell University College of Medicine, New York City, has arranged a course of lectures on general medicine for the Oneida County Medical Society, Utica, New York. The course, currently being given, is as follows: March 3 "Newer Chemotherapeutic Methods," Dr Norman Plummer, New York City, March 10 "The Significance of Laboratory Tests and Methods in the Practice of Medicine," Dr Robert Barr McKittick, New York City, March 17 "The Relation of Vitamins to Disease," Dr Norman Jolliffe, New York City, March 24 "Abdominal Pain," Dr Edward M. Livingston, New York City, March 31 "Various Aids in the Diagnosis of Cancer," Dr Louis C Kress, director, Division of Cancer Control, State Health Department, Albany.

The Medical Society of the District of Columbia has authorized the establishment of a twenty-four-hour telephone service. The Society has granted a loan of \$1,000 to subsidize the Medical Bureau, as the service is called, during the first six months. More than 100 physicians have subscribed to the bureau, according to *Medical Annals*, as quoted in the *Connecticut State Medical Journal*. The goal of 200 members is expected to be reached before another directory is issued. The bureau is offering two types of service, an Alternate Listing Service and a Secretarial Service. The former is the well-known listing, "if no answer call," while in the latter service the physician's office is connected with the bureau switchboard by a private wire.

Dr Clarence E de la Chapelle of the New York University College of Medicine has arranged a course on heart disease for the Chemango County Medical Society to be given at the Norwich Club, Norwich, New York, at 4 30 P.M. April 3 "Cardiac Structure and Its Disorders," Dr Irving Graef, April 10 "Cardiac Functions and Their Disorders," Dr Charles E Kossman, April 17 "Rheumatic Fever and Rheumatic Heart Disease," Dr Currier McEwen, April 24 "Hypertension and Hypertensive Heart Disease," Dr William Goldring, May 8 "Syphilitic and Arteriosclerotic Heart Disease," Dr C E de la Chapelle. The speakers are on the faculty of the New York University College of Medicine.

The following lectures on obstetrics will be given before the Tioga County Medical Society on Wednesdays, at 6 30 P.M.—alternately at Waverly and Owego: March 28 "Normal Labor, Sepsis, Intercurrent Diseases," Dr F J Schoeneck, April 2 "Prenatal and Postnatal Care, Care of Newborn, Pelvimetry," Dr Merten C Hatch, April 9 "Hemorrhages of Pregnancy," Dr Francis R. Irving, April 16 "Operative Deliveries, Breech Delivery," Dr Raymond J Pieri, April 23 "Toxemias of Pregnancy," Dr Edward C Hughes.

All the speakers are professors of obstetrics at the Syracuse University College of Medicine, Syracuse, New York.

# Woman's Auxiliary

To the Medical Society of the State of New York

CONVENTION—"Hello! Carl! say—what's all this fuss about this particular convention?" "I'm surprised, Pete, that you don't know, but here's the answer. For the first time in the history of the Erie County Medical Society, the ladies are officially playing hostess to the doctor's wives (and their friends) of the empire state. Here is what *they* say about it: 'All roads lead to Buffalo, April 28, 1941. It makes no difference whether you come with Josephine in a flying machine or Lucile in a merry automobile or just an everyday choochoo as long as you arrive. Toss your cares to the four winds, and pack your troubles in your old kit bag. This will be no place for a misanthrope or misogynist. From the hellhop of the Hotel Statler (our headquarters) to the president of our auxiliary, we greet you. You will find a great big welcome on the mat, and *welcome, bienvenue, bien venido, caed multa salte, sralom wilamy, szwesen-vanlatva, welkomen, benvenuto* resounding from every corner. This is to be a convention that will go down in the history of the organization as one devoted to the promotion of joy and good fellowship. We're here to greet you with open arms!'"

BETTY H. WERTZ, *Chairman of Convention*

## Auxiliary's Fifth Birthday

To commemorate this notable event the state historian, Mrs. Otto Pfaff, of Oneida County, has abstracted a summary of the progress of our State Auxiliary. On March 11, 1936, a meeting to organize the Woman's Auxiliary to the Medical Society of the State of New York was held at the Waldorf-Astoria in New York City. Mrs. John L. Bauer, the organizing chairman, called the meeting to order. Present were Mrs. Roger M. Herbert, of Nashville, Tennessee, who at that time was president of the Woman's Auxiliary of the American Medical Association, Mrs. Samuel G. Red, of Houston, Texas, founder of the Woman's Auxiliary, delegates and alternates from Nassau, Queens, Kings, Onondaga, and Cayuga counties. At this time the following officers were elected with the exception of the president and recording secretary who were elected by acclamation: president, Mrs. J. L. Bauer, of Brooklyn, president-elect, Mrs. F. R. Irving, of Syracuse, first vice-president, Mrs. E. Fleming, of Forest Hills, second vice-president, Mrs. F. Elliott, of Brooklyn, recording secretary, Mrs. H. L. Hirsch, of Rockville Centre, treasurer, Mrs. D. J. Swann, of Brooklyn, board of directors (three years), Mrs. Charles Goodrich, of Brooklyn, and Mrs. A. M. Bell, of Sea Cliff, (two years), Mrs. H. S. Bull, of Auburn, and Mrs. J. W. Pennock, of Syracuse, (one year), Mrs. B. Birkowitz, of Brooklyn, and Mrs. E. A. Griffin, of Brooklyn. The first executive board meeting convened April 2, 1936, at the home of Mrs. J. L. Bauer in Brooklyn. Plans were made to attend the first convention at the Waldorf-Astoria during the same month. Under the able leadership of Mrs. Bauer and with the aid of the organization chairman, Mrs. E. Flem-

ing, the counties soon began to show an interest in being part of the Auxiliary.

At the present time a total of twenty-six interested active counties are working to further the aims of the medical society. A few of the projects have been the Speakers' Bureaus among the physicians, Maternal Welfare Campaigns, Cancer Control, Mental Hygiene, Educational Programs on Venereal Diseases, Girl and Boy Scout work, furthering the reading of Hygiene and other medical literature, and Medical Legislation.

The following have held the office of president: Mesdames Bauer, F. R. Irving, of Syracuse, D. J. Swann, of Flushing, G. S. Towne, of Saratoga, L. H. Kice, of Garden City. Mrs. G. B. Adams, of Auburn, is the incoming president. Although but five years have passed, a permanent place has been carved by this organization through its sincerity of endeavor and loyal support of its members.

## County News

Albany. Dr. Harold T. Street, nutrition expert of the Winthrop Chemical Company, gave an illustrated lecture on "Vitamins in Everyday Life" at a dinner meeting of the auxiliary held in January. Favorable comment was made on the amount of valuable information gained by this project. A tour of the chemical plant followed. The excellent attendance for this meeting was gratifying. The public of Albany County is to have the unusual opportunity to hear Dr. Haven Emerson, professor of public health administration at Columbia University, New York City, speak on "Compulsory Health Insurance or Voluntary Sickness Insurance." This campaign is being sponsored by the auxiliary under the direction of its president, Mrs. A. L. Madden. The publicity has been ably conducted by Mrs. J. B. Horner, who has extended the information to the cities of Amsterdam, Gloversville, Glens Falls, Hudson, Saratoga, Schenectady, Troy, Ballston, Cambridge, Catskill, Cobleskill, Cohoes, and Rutland, Vermont. An auxiliary must be appreciated and esteemed when it transfuses to the public a vital and eminent topic such as Dr. Emerson will present.

Columbia. The first assembly of 1941 was well attended at the Cavell House of the Hudson City Hospital. Mrs. R. L. Bowerhan, of Copake, presided. It was voted to send \$10 to the Physicians' Home, Incorporated, and \$25 to the fund for student nurses. Dr. W. J. L. McDonald, county health commissioner, gave an interesting talk on the functioning of a county health unit.

Fulton. The February meeting convened at the Hotel Johnstown. Mrs. B. G. McKillip conducted the business affairs after which a card party was enjoyed. Mrs. J. E. Grant, of Northville, and Mrs. K. P. Foster, of Gloversville, were named as delegates to the state convention.

Jefferson. Medical legislation pending in

# Books

Books for review should be sent to the Book Review Department at 1313 Bedford Avenue Brooklyn, N Y Acknowledgment of receipt will be made in these columns and deemed sufficient notification Selection for review will be based on merit and interest to our readers

## RECEIVED

**The Life of Sir William Osler** By Harvey Cushing Complete in One Volume. Octavo of 1,417 pages New York, Oxford University Press, 1940 Cloth, \$5 00

**Lipidoses Diseases of the Cellular Lipid Metabolism.** By Siegfried J Thannhauser, M.D Edited by Henry A Christian, M.D Octavo of 370 pages, illustrated New York, Oxford University Press, 1940 Cloth, \$6 00

**A Textbook of Clinical Pathology** Edited by Roy R. Kracke and Francis P Parker Second edition. Octavo of 780 pages, illustrated. Baltimore, Williams & Wilkins Company, 1940 Cloth, \$6 00

**The Doctor and the Difficult Child.** By William Moodie, M.D Octavo of 214 pages. New York, The Commonwealth Fund, 1940 Cloth, \$1 50

**A Surgeon's Life The Autobiography of J M T Finney** Octavo of 396 pages. New York, G P Putnam's Sons, 1940 Cloth, \$3 50

**Diagnosis and Treatment of Menstrual Disorders and Sterility** By Charles Marer, M.D., and S Leon Israel, M.D Octavo of 485 pages, illustrated. New York, Paul B Hoeber, Inc., 1941 Cloth, \$6 50

**Diagnosis and Treatment of Arthritis and Allied Disorders.** By H M Margolis, M.D Octavo of 551 pages, illustrated. New York, Paul B Hoeber, Inc., 1941 Cloth, \$7 50

**Practical Neurological Diagnosis With Special Reference to the Problems of Neurosurgery** Second edition. By R Glen Spurling, M.D Octavo of 239 pages, illustrated. Springfield, Charles C Thomas, 1940 Cloth, \$4.00

**Clinical Pellagra.** By Seale Harris, M.D Quarto of 494 pages, illustrated. St Louis, C V Mosby Co., 1941 Cloth, \$7 00

**From Thirty Years with Freud.** By Theodor Reik. Translated by Richard Winston. Octavo of 241 pages. New York, Farrar & Rinehart, Inc., 1940 Cloth, \$2 50

**Bacteriology in Neuropsychiatry A Survey of Investigations Concerned with the Specific Role of Infectious and Immune Processes** By Nicholas Kopeloff, Ph.D Octavo of 316 pages. Springfield, Charles C Thomas, 1941 Cloth, \$4.50

**A Textbook of Clinical Neurology** By J M Nielsen, M.D Quarto of 672 pages, illustrated. New York, Paul B Hoeber, Inc., 1941 Cloth, \$6 50

**Plague On Us.** By Geddes Smith. Octavo of 365 pages, illustrated. New York, The Commonwealth Fund, 1941 Cloth, \$3 00

**How to Prevent Gout** By Israel Bram, M.D Octavo of 182 pages, illustrated New York, E P Dutton & Co., 1941 Cloth, \$2 00

**Strange Malady The Story of Allergy** By Warren T Vaughan, M.D Octavo of 268

pages, illustrated New York, Doubleday, Doran & Co., 1941 Cloth, \$3 00

**The Extra-Ocular Muscles A Clinical Study of Normal and Abnormal Ocular Motility** By Luther C Peter, M.D Third edition Octavo of 368 pages, illustrated. Philadelphia, Lea & Febiger, 1941 Cloth, \$4.50

**Diseases of the Digestive System.** Edited by Sidney A. Portis, M.D Octavo of 952 pages, illustrated Philadelphia, Lea & Febiger, 1941 Cloth, \$10

**Electrocardiography in Practice** By Ashton Graybiel, M.D., and Paul D. White, M.D Oblong Octavo of 319 pages, illustrated. Philadelphia, W B Saunders Co., 1941 Cloth, \$6 00

**The Medical Clinics of North America.** November, 1940 Volume 24, Number 6 (Philadelphia number) Octavo Illustrated Philadelphia, W B Saunders Co., 1940 (Six numbers a year) Cloth, \$16 net, paper, \$12 net

**The Medical Clinics of North America.** January, 1941 Volume 25, Number 1 (Chicago number) Octavo Illustrated. Philadelphia, W B Saunders Co., 1941 (Six numbers a year) Cloth, \$16 net, paper, \$12 net

**Anus, Rectum, Sigmoid Colon Diagnosis and Treatment.** Second edition By Harry E Bacon, M.D Octavo of 857 pages, illustrated Philadelphia, J B Lippincott Company, 1941 Cloth, \$8 50

**Germes and the Man** By Justina Hill. Octavo of 461 pages New York, G P Putnam's Sons, 1940 Cloth, \$3 75

**The Therapy of the Neuroses and Psychoses A Socio-Psycho-Biologic Analysis and Resynthesis** By Samuel H Kramers, M.D Octavo of 512 pages Philadelphia, Lea & Febiger, 1941 Cloth, \$5 50

**The American College of Physicians Its First Quarter Century** William G Morgan, M.D, Historian. Quarto of 275 pages, illustrated. Philadelphia, The American College of Physicians, 1940 Cloth.

**The Endocrine Function of Iodine** By William T Salter Octavo of 351 pages, illustrated Cambridge, Harvard University Press, 1941 Cloth, \$3 50

**Textbook for Male Practical Nurses.** By Gayle Coltman, R.N Duodecimo of 215 pages New York, The Macmillan Company, 1941 Cloth, \$2 00

**Born That Way** By Earl R. Carlson, M.D Duodecimo of 174 pages New York, John Day Company, 1941 Cloth, \$1 75

**Manual of Physical Diagnosis with Special Consideration of the Heart and Lungs.** By Maurice Lewison, M.D., and Ellis B. Freilich, M.D Octavo of 317 pages, illustrated Chicago, The Year Book Publishers, Inc., 1941 Cloth, \$3 00

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\* Espe & Dye — Effect of Curd Tension on the Digestibility of milk — Amer Journal Diseases of Children — 1932 Vol 43 p 62

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## "LOOKING TO HOME" IN HEALTH TRAVEL

WITH a "No Business During Alterations" sign on the entrances to most of the countries in Europe, Americans are beginning to learn that "Saratoga" isn't just the name of a race track, and Warm Springs and Hot Springs are not some new kind of gadget for keeping comfortable during cold winter nights. So it's an ill wind that blows nobody good, or rather, a tame war that does no good—for countries that stay out of it.

Vichy, known best to many Americans as a fashionable health resort, is now merely a war name. Carlsbad and other equally noted European spas aren't even in the news. The once nice, well-to-do American hydrotherapeutic patients are learning that even in "water-cures" there is no place like home.

A report of the United States Travel Bureau states that the National Spas of our West expect their largest attendance in 1941. Government-owned and supervised, fees fixed and moderate, the American spa has much to recommend it, war or no war. Ranking among the best in the world, our great National Parks contain several ranging from a cosmopolitan formality in the larger spas to a more exclusive atmosphere where even the fastidious can be contented in the American way of "taking the cure."

The fact that at renowned Hot Springs in Arkansas

some twenty-five thousand guests can be accommodated at one time, is some evidence of the new-found popularity of American health resorts.

But let's look a little closer to home. Rich as in many things we need, New York State contains almost unlimited resources and facilities for the restoration of health and the care of the ill.

Few states or countries for that matter can boast of so many advantages for the treatment and convalescence of its people in poor health as can this State of ours. Here we have the high, dry altitudes so helpful in some cases of tuberculosis and other types of illness. We have fine spas and mineral waters useful in treating certain cases of deficiencies. Saratoga Spa, famous since 1773, is the only place with medicinal waters east of the Rockies that has naturally carbonated waters. There are seaside resorts for those who may benefit from salt-laden air or bathing in the salt ocean water. Excellent camping and outdoor recreational centers, for those needing the stimulus of nature, are plentiful. And, notably, the State has a wealth of the finest institutions for the care and treatment of every kind of disease and chronic ailment.

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## MEETING ATTENDANCES AND INTEREST

ACCORDING to a RELIABLE SOURCE of information, over 18,500 recorded major conventions and meetings are held each year in the United States and Canada. These events range in attendance from a handful of 10 to audiences of more than 700,000. It is difficult to arrive at any exact average attendance as the reports are incomplete—some being purely guesses, some publishing no figures, and most giving totals in round numbers only.

However, from our cursory survey a fair estimate of about 3,200 average per meeting has been obtained. If this figure is reasonably representative, then the total attendance for all the meetings must top 59 million. This seems incredible until we pause to consider that there must be considerable duplication and overlapping of individuals.

In medical and allied fields, we found only 117 meetings so far announced for this year. We say *only* because compared to the total given above, it does appear rather insignificant. Still, here there is no record made

of hundreds of district and county or smaller meetings which do not have exhibits as part of the functions.

Attendance at these meetings last year totaled 110,946 or an average of approximately 950 per meeting. The total memberships of the societies holding these National and State conventions amounts to 270,925. This indicates that less than half, or 41 per cent of the members attend meetings. Here again some allowance should be made for persons attending more than one meeting.

Taking into consideration that the medical or allied meeting is generally a closed affair, the attendance is proportionately better than that at the general run of conventions, meetings and shows. Most of the general meetings admit the public or non-members which naturally swells the attendance in many cases far out of proportion to a strictly membership affair.

This is evident also, to a lesser degree however, in some dental and some hospital meetings. But where the public is invited, it is not the practice to tabulate such visitors.

(Continued on page 638)

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There is a greater dividing line than the mere technical definitions. Probably modern indifference has had a tendency to erase the correct usage of the titles Sanatorium and Sanitarium. As doctors know, of course, and operators of such institutions should know naturally, a sanatorium (quoting Webster) is an institution for the care of invalids or the treatment of particular diseases

A sanitarium (still quoting Webster) is a sanatorium—especially one where the treatment is *prophylactic* instead of *therapeutic*. Another version of "Webster" makes no distinct difference, but gives an added touch to the description of a sanitarium as being a resort having natural aids for curing the sick.

If the names are taken seriously then, and literally, the doctor wouldn't send a patient already in ill health to a sanitarium where, if we are interpreting correctly, treatment consists purely of the prevention of disease.

But sanitarium or sanatorium, or call it by any other name, these institutions that can hardly be replaced in the

(Continued on page 688)

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ing and 430 for the miscellaneous. In the State division, average figures are 900 for medical and surgical, 950 for dental, 775 for hospital and 220 for the miscellaneous meeting. The per cent attending on a basis of membership under National amounts to 19 per cent for medical and surgical associations, 206 per cent for the dental, 189 per cent for the hospital and 27 per cent for miscellaneous. Under State, the percentages are 29 for medical and surgical, 79 for dental, 191 for hospital and 68 for miscellaneous.

The figures give a rather poor impression of interest shown in the medical and surgical meetings, but it must be remembered that the attendances at dental and hospital conventions are bolstered, as stated before, by the inclusion of others not members or actually colleagues. In addition, in specific cases, members of auxiliaries attending are included also in registration figures. At medical and surgical meetings, to the contrary, such organizations taking part in the program have their own registrations and are not reported in the membership attendance.

The figures also suggest that State meetings are more heavily attended than are the National conventions, although this does not hold true in dental meetings. This is to be expected as the time and expense element connected with attending a distant National convention does not exactly encourage a greater percentage of attendance.

How do meetings of the Medical Society of the State of New York stack up with these comparisons? Last year, when a more accurate system of recording attendance was installed, 3,640 physicians were registered. This amounted to almost 20 per cent of the Society's

total membership. It represents about 15 per cent of the total attendance at all State medical meetings and 8 per cent of the combined attendance at National and State medical conventions.

Compared with all meetings of a professional nature, the New York State meeting ranked second in size in the medical and surgical group and fifth in all branches of healing. Actually, for reasons previously given, it should rate second in all branches as well, for besides the A.M.A., only three dental meetings surpassed our attendance by a small margin and these solely because their figures covered more than just members.

If we consider that the A.M.A. has over five times the membership of the Medical Society of the State of New York from which to obtain attendance at its meetings, the New York State meeting makes even a better showing and truly becomes the leading convention of its kind in point of membership interest. If we use another measuring stick—the number of technical exhibitors taking a material interest in the meetings—our State meeting looms up proportionately as important as any National convention and considerably more valuable to them than any other State medical event.

Of course, the meeting at Buffalo this year is not expected to surpass last year's record in attendance due to smaller facilities, geographical location and distance from the State's center of population, but we do anticipate the largest and most successful up-State meeting in the history of the Society.

Every member who can spare a day or two is urged to attend this meeting, for many current and pertinent subjects of importance to all New York State physicians are scheduled for discussion and consideration.

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complete care of the chronic sick, the convalescent, or the invalid are to be judged by what they can do and how they do it rather than what they choose to be called. At least that's our main concern.

A study of advertisers in this important department is extremely interesting. Here you will find an exceptionally fine representation of institutions conveniently located for the patients of physicians in this State. The appeal of location as an essential factor in the ultimate choice of both the physician and patient is stressed by many of the advertisers.

Environment seems to be a second weighty factor, for it is noted almost as often as distance. Another important distinction, probably more important to the institution than to the patient or his physician although it does carry weight, is the number of years the institution has been established. Rates seem significant to some but ignored by others, yet it is probably the chief factor in a decision more times than it is not.

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## MEETING ATTENDANCES AND INTEREST

(Continued from page 634)

in the reported attendance. Ordinarily, non-members attending are actually persons in the same profession or of some closely connected field. As in the case of some dental meetings, dental hygienists and other assistants when officially invited may be included in the total registration.

In the case of hospital meetings, similarly, lay employees of the staffs and nurses often take a part in the program and special functions. This custom leads to a showing in published figures of an attendance often exceeding the entire membership of the association.

A comparison of the 117 meetings in medical, surgical and allied fields is extremely interesting. We must acknowledge the incompleteness of the report studied, but taking the material available we found that the 117 meetings included thirty-three National conventions and eighty-four State meetings. In the National classification, medical and surgical meetings total 12, dental 6,

hospital 5 and miscellaneous "health" associations numbered 10. Meetings under the heading "State" comprised 35 medical and surgical, 33 dental, 8 hospital and 8 miscellaneous.

Attendances at these meetings were reported as 45,623 for the National group and 65,323 for the State group. Breaking these totals down, National medical and surgical conventions were attended by 21,191 persons, National dental meetings by 13,088, National Hospital by 7,003 and miscellaneous by 4,341. Under the State listing, 24,964 attended the medical and surgical meetings, 32,418 attended dental meetings (this figure includes other persons besides doctors of dentistry), 6,197 the hospital meetings and the balance of 1,744 miscellaneous events.

The average attendance in the National classification is approximately 1,750 per medical and surgical convention, 2,160 per dental meeting, 1,400 per hospital meet-

# NEW YORK STATE JOURNAL OF MEDICINE

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## *Editorial*

### You Will Never . . .

You will never operate under a carbolic acid shower. You will probably never carry a catheter in the sweatband of your hat. You will never see tan bark on the streets around hospitals to prevent noise or bales of oakum and peat moss in hospital corridors to be used as overdressing for infected wounds. You will never see 100 cases of typhoid in a row or 5 in one family die of diphtheria in one and one-half hours!

At the one hundred and thirty-fifth annual meeting of the Medical Society of the State of New York, 1941, in Buffalo, you will see not a single tracheotomy demonstrated or 1 case of diphtheria intubated. Yet at the time of the eighty-first meeting O'Dwyer's tubes were the surgeon's hope. Of his experiences Jacobi wrote "nearly 3,000 tracheotomies, 2,800 terminated in death." Fifty-four years

You might come to Buffalo on April 28 by steam train or arrive in a horse-drawn buggy, if you live close by, as you would have come to the eighty-first meeting, but the chances are you will come by automobile or plane this year, if you can, and keep in touch with your office by using the improved facilities of Mr. Bell's recently developed telephone. If you are unavoidably prevented from attending, you may be able to hear some of the proceedings through the courtesy of Senatore Marconi, Dr. Lee DeForest, and others of our recent co-workers in science. And we can assure you that they will be worth hearing.

We think it only fair to remind members that while in Buffalo they will be within the jurisdiction of the hardy and formidable Medical Society of the County of Erie. In the year 1827 the society's receipts in membership fees amounted to \$11. A resolution authorized the treasurer "to collect outstanding dues from members—peaceably if he can, forcibly if he must." Such is the quality of our hosts. Surely the visiting membership of the State Society can reasonably expect great things from men of such caliber, vigor, and determination.

In passing, it is of more than historic interest that in the University of Buffalo, founded in 1846, Dr. White raised a storm of protest in Buffalo, throughout the state, and, indeed, throughout the United States by "introducing demonstrative or clinical midwifery" into the college course. It had never before been attempted in this country. "Seldom," it is said, "has an event occurred that so completely shook the foundations of society in any city as did this." Newspapers denounced it as immoral. Dr. White was drawn into the law courts and was vindicated, for many years he continued to teach obstetrics and gynecology in the university.

Noteworthy also is the fact that Dr. Roswell Park and Assemblyman Henry W. Hill secured in 1898 from the Legislature the first appropriation ever made from public funds, either in this country or abroad, for the purpose of combating the ravages of cancer.

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have considered the magazine profitable enough to continue using it as one of their choice mediums.

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## Approach to Health

Let it be assumed that all parties at interest—government, voluntary agencies, organized medicine, the press, and the public—sincerely desire for the American people the maximum of health obtainable. At once, the end, the objective, is removed from the field of controversy. How to obtain it? Here, concerning the means to the end, there is wide divergence of honest opinion among the parties at interest. Why should this be so? Because, first, of the perspective of the problem and because, second, of the absence of factual evidence.

*Perspective*—Medicine of all the parties at interest stands the closest to the actual means of operation. Whatever means to the agreed end are proposed, medicine is the only agency of all the parties at interest which must know *at first hand* whether the proposed means can or cannot be made practical in operation. And it can know that only to the extent that scientific, factual information exists relating to the subject. Medicine is practical, it does not guess where it can know, it deals with human lives, and health is an attribute of human life, of human minds, and of human bodies.

With respect to the health of young men in New York City, a report by Col Samuel J. Kopetzky of the results of the examinations of 17,540 men between the ages of 21 and 36 shows that 8,883 were accepted for full military duty, 3,984 men were classified as qualified for limited military service, and 4,673 were disqualified (Class F4) as physically unfit for any military service.

The rejections are divisible into four groups

A Developmental Defects—Defective vision, congenital deformities, and the like

B Traumatic Causes—Results of industrial accidents, athletics, accidents from all causes

C Diseases not yet conquered by medical science

D Neglect Due to Ignorance—Lack of attention to nondisabling ailments

that have been permitted to become chronic because they did not interfere with the performance of the duties of civil life

Of the 17,540 men examined 49.36 per cent were rejected, and, of these, 22.71 per cent were classified as able to perform limited military duty. This leaves about 26.64 per cent classified as totally unfit for military duty. Particularly gratifying is the fact that, of the total, mental and nervous conditions accounted for only 4.24 per cent or 745 men. Among the 17,540 registrants only 121 gave two positive serologic tests, some of which were of asymptomatic syphilis. The total number of persons suffering from syphilis was 126 or a percentage of 0.72.

This report compares favorably with figures on the examination of 108,000 men given out by Col Leonard Rowntree, M.C., in Chicago, February 16, 1941. Of the registrants, 32 per cent were rejected because of physical and mental deficiency by draft board physicians. Twelve per cent of these who passed were subsequently rejected by Induction Board physicians.

Disqualifications for heart disease reported by Colonel Kopetzky were 10.75 per cent, defective vision, 11.71 per cent, teeth and gums, 11.37 per cent. There is here being created at last an approach to one phase at least of the national health problem, the assembling of reliable statistical data free from sentimental or emotional embroidery and obfuscation. Governor Lehman, as chairman of the State Defense Council, said on March 6, 1941: "Anything we accomplish in the protection and promotion of health will be lasting. When the threat of war has passed and world peace and good will have been restored, it will be a permanent asset which will pay increased dividends in the years that lie ahead."

"Nearly three thousand men and women in a volunteer capacity are working for the Selective Service System. Doctors, lawyers, business leaders, and

Currently, we are immersed in vast preparations for national defense. These preparations contemplate not only the mobilization of large numbers of men but the mobilization also of the vast store of

technical and scientific knowledge which is available. Much of this will be forthcoming at the annual meeting for your benefit. Make it your business to be there.

## Medical Relief

The joint statement on medical relief in the State of New York, published in the March 15, 1941, issue of the JOURNAL over the signatures of Jackson Davis, M D, chief medical officer of the State Department of Social Welfare, and Christopher Wood, M D, chairman of the Subcommittee on Medical Relief of the Medical Society of the State of New York, is a most promising and refreshing contribution, clear, concise, and cogent, to the hitherto murky annals of indigent medical service.

Let no one think that this statement is a joint inspiration. It is the result of a long conflict of many minds, the product of many weary hours of patient conference, argument, research on both sides. And the work is by no means finished. While it may be said that the State Department of Social Welfare "is not unsympathetic toward these principles," it feels "that much additional thought and study are necessary, especially with reference to local conditions, before a common ground can be reached." The principles referred to concern the disapproval of contract practice and the exploitation of clinics in the care of the indigent. On all other matters, there seems to be a fair degree of agreement on the part of all concerned.

We should like to see the medical care of the indigent in this state put upon as rational and intelligent a foundation as the care of injured workmen now is. It cannot be done in a moment. The Workmen's Compensation Law and practice under it took many years and much revision to reach its present state of development. As the joint statement points out, "Any platform adopted by the State Medical Society, or by local medical groups, has no force whatever in effecting [?] the conduct of medical re-

lief work unless agreement can be reached with the state and local departments of welfare concerning this platform. Such agreements, if reached, are essentially mutual understandings and in no sense abrogate any portion of the Public Welfare Law." And yet, experiment in certain localities by agreement between the local welfare departments and the local medical profession is to be urged as of the utmost value. How otherwise is factual and clinical experience to be gained? What may work well in one experimental area may not work well at all in another. To know with certainty, experiment is essential. On the basis of data thus accumulated, and probably not before, reasonable changes in regulations and, if necessary, in the law can be made.

From now on, it seems to us imperative that experiment by agreement be undertaken on a county basis. As a suggestion, let these experiments by agreement be designed to provoke interest and active participation in welfare medical service by the most competent medical men in the experimental areas. If the welfare departments will cooperate, no physician should refuse a reasonable donation of his time for this kind of work. It is admitted that the red tape and the hopelessly inadequate financial return at present constitute a very real and solid stumbling block in the way of participation by competent and busy medical men. The same thing was true of workmen's compensation work not so many years ago. It is, however, our firm conviction that rational and cooperative voluntary experiment by competent physicians and intelligent administrators of the public welfare law will serve to demonstrate what can be done and in what respects the law must be changed.

# UROSURGERY IN THE YOUNG THE PEDIATRICIAN'S ROLE

MEREDITH F CAMPBELL, M D , New York City

THE initial step in the successful surgical treatment of urologic disease in the young must necessarily be taken by the physician who first sees the patient, whether this physician be a pediatric specialist or general practitioner. It is his responsibility to recognize that a urologic condition probably exists and to know the indications for special urologic investigation. The ever increasing collaboration between pediatricians and urologists is not only producing most gratifying therapeutic results but is reducing the number of children with serious urologic disease whose deaths must be considered the fruit of medical neglect. Children do not outgrow ureteral stricture, infected hydronephrosis, renal tumor, renal tuberculosis, or urinary stones; the diagnosis of chronic pyelitis, enuresis, or simply weak bladder too often satisfies the physician.

More than 90 per cent of urologic lesions in the young result from anomalous development, urinary infection, or their combined effect. The incidence of maldevelopment is higher in the urinary tract than in any other system (in 5 to 13 per cent of all bodies studied postmortem), and the consequent incidence of urologic disease is correspondingly high, especially in the young. Innumerable children never reach adulthood because of these factors. The present discussion is a brief consideration of urologic diagnosis in children together with a few suggestions as to how the pediatrician may be expected to cooperate in the urologic treatment.

The indications for special urologic examination in infants and children follow:

*Pyuria Which Persists One Month Despite Vigorous Medical Treatment*—Acute urinary infection usually tends to be clinically self-limited, yet the disappearance of acute manifestations of the disease and the clearing of the urine as determined by urinalysis of the casually voided specimen is too frequently accepted as the test of cure. Yet bacteriologic studies have shown that in a large number of these children the etiologic organisms are still present in the urine as long as six months after clinical cure has been pronounced. In

short, these children are clinically cured but are not bacteriologically cured. With the recurrence of acute obstruction along the urinary tract or of acute focal infection elsewhere in the body, and particularly in the respiratory or gastrointestinal tracts, acute exacerbation of the urinary infection is likely to be observed.

In the study of urinary infection, aseptic collection of the specimen for examination is of prime importance. The specimen for bacteriologic and microscopic examination should always be collected from the woman by catheterization. In the man the prepuce should be retracted and the glans penis washed off with an antiseptic solution, such as oxymercure or bichloride of mercury 1:1,000. The patient then voids a small amount of urine, after which the remainder of the bladder content is passed into a sterile receptacle from which the specimen is taken for bacteriologic examination (smear and culture) as well as microscopic analysis. When this technic cannot be satisfactorily employed in the man, catheterization must be performed. Only by following this method in both sexes can contamination of the urine by extraneous factors be avoided.

As to the recognition and designation of pus. No cell should be identified as a pus cell which does not show the "paw broker's" nucleus characteristically found in the polymorphonuclear leukocyte. It is of no moment whether the pus cells are clumped or single, when many cells are present, some are likely to be gathered in clumps. More than three or four white blood cells per low-power field in the uncentrifuged specimen merit clinical attention. Normally, an average of about 300,000 white blood cells and red blood cells are passed from the kidney during twelve hours. But this number is relatively so small as to cause not more than one cell to be seen in a low-power field of the uncentrifuged specimen. Yet the differentiation is rarely as fine as this, for even in mild urinary infections there are apt to be as many as eight or ten leukocytes in the low-power field.

If the cell counts are confined only to well-shaken uncentrifuged urine specimens, there is a constant base factor for the repeated estimations so essential to adequate clinical

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 9, 1940.

From the Departments of Urology and Diseases of Children, New York University College of Medicine and Bellevue Hospital.

others are giving of their time freely as citizens of the community and the nation, " said Col Arthur V McDermott, director of Selective Service for New York City, over WBNX in a radio broadcast on March 9, 1941

From these samples of the general health of the age group under study, it would seem that the pattern of a health program based on realities may be discerned. Such a program would discard wishful thinking for hard, factual observation and be based on logical conclusions drawn from these facts.

All these thousands of doctors and members of the public are thus coming in

direct contact with certain aspects of the national health problem. They are acquiring first-hand information. Multiply this local experience by the thousands of other localities in which others are similarly becoming acquainted at first hand with some of the health problems of the nation. It is a most wholesome and unemotional approach to the question of the real facts about the health of America.

When men of honest purpose from all of the agencies concerned get together to solve these health problems, respect for their conclusions is assured, and reason triumphs over emotionalism.

### ATTENTION!

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symptoms promptly disappeared. Yet one must not forget that children also have ureteral stone colic, acute vesical retention, tuberculous epididymitis, acute prostatitis, and other urologic diseases that we are more accustomed to encounter in adults.

*Tumor Along the Urinary Tract*—Hydronephrosis is the commonest renal tumor encountered in children but we are also concerned with neoplasm, perirenal suppuration, and even a distended bladder.

*Injury of the Urogenital Tract Calls for Special Urologic Investigation and Management*—With the high incidence of coasting, athletic, and automobile injuries of the young, the problem of urogenital trauma, and especially of the kidney, is likely to be recurrent in pediatric practice. These injuries are always potentially grave and, because of the tendency to delayed shock in children, the gravity of the injury is likely to be unappreciated by the physician during early hours following its receipt. These children are likely to be up about and playing for several hours following a serious renal blow, apparently well, yet bleeding internally, but subsequently they pass into profound and sometimes fatal shock. Unless the renal blood supply has been severed or thrombosed by the trauma or the ureter divided or plugged by clots, hematuria will be observed. The combat of shock by blood transfusion, morphine, quiet, and heat, together with hourly blood counts in cases of marked hematuria, are the indicated therapeutic steps. By excretory urography, many pelvic and peripelvic extravasations will be demonstrated without great disturbance to the patient. Mild hematuria without profound shock usually can be safely treated conservatively by absolute rest and watchful waiting. Continued fresh bleeding for twenty-hour hours calls for renal exploration and by observing this criteria many kidneys can be saved by conservative resection or suture according to indication or technical facility. Yet early nephrectomy is often indicated and is usually lifesaving. It cannot be too strongly urged that when bleeding has apparently stopped with conservative treatment, and there is no longer shock, these patients should be kept quiet in bed for a relatively long time, our recommendation is at least ten days. Unfortunately, it is common practice to permit children with moderate renal trauma to be running about within forty-eight hours following cessation of hematuria or even while microscopic hematuria persists. In short,

renal injuries in children are always grave.

Only by keen recognition of these indications for urologic examination and by prompt institution of the special diagnostic investigation implied is it possible to render the patient the greatest therapeutic benefit. An early anatomic diagnosis enables many potentially serious conditions to be corrected by comparatively simple conservative measures. Through failure to recognize early that renal disease exists, nephrectomy often becomes necessary and sometimes a life is needlessly lost. It is now well established that with the exception of certain new growths of the genital tract, children suffer the same urologic diseases as adults. The fundamentals of special urologic examinations and treatment are identical in patients of all ages.

In the surgical management of major urologic disease in children, the best results will be achieved only through closest cooperation between the pediatrician and the urologist. The high metabolic rate of children requires special consideration as do other physiologic processes which in children vary from those of adults. In other words, the child is not a miniature adult and no urologist of my acquaintance is qualified to assume the responsibility of the settlement of the many special pediatric problems which constantly arise in the urosurgical management of infants and young children. Moreover, the urologic surgeon who assumes such management unassisted is apt to be taking upon his shoulders a responsibility which is both unwarranted and unfair alike to the patient and to himself.

In the preoperative preparation of the child, the pediatrician may advisedly have the important hand, particularly in the attainment of the best alimentary conditions possible and in his assurance to the surgeon that the child's cardiovascular and respiratory systems warrant proceeding with the operation. Most urologic operations in the young are elective rather than emergency, and for this reason ample time should be taken for proper preparation of the patient for the surgical treatment. Here the combat of dehydration and acidosis are the two most important considerations. The determination of the renal function by excretory and retention tests may be attended to either by the pediatricist or the urologist. Food ingestion should be maintained until six to ten hours preoperative in older children and until two hours preoperative in infants, since starvation favors the development of acidosis. Moreover, preoperative purgation is condemned because of the

management I employ the centrifuge only to throw down bacteria for staining

With the development of more powerful urinary antiseptics of the mandelic acid and sulfanilamide groups, we are now able to sterilize the urine in many patients with congenital anomalies of the urinary tract or other conditions that cause urinary stasis and in which cases the antiseptics previously employed were valueless. Therefore, in chronic pyuria, and this point cannot be too strongly emphasized, even though we are able to sterilize the urine by these stronger antiseptics, the fact that the pyuria previously persisted at once suggests the existence of urinary stasis. We insist that in these children whose chronic urinary infections have been cured by mandelic acid, or sulfanilamide, an excretory urographic study be made to determine that the urinary tract is morphologically normal before the patient is dismissed. Moreover, no patient should be discharged as cured of urinary infection until at least two native cultures of catheterized, or otherwise aseptically collected, specimens have been obtained. If this dictum is observed, the incidence of so-called "recurrences of acute pyelitis" will be notably reduced.

*Acute Fulminating Urinary Infection Which Does Not Respond in Four to Six Days of Intensive Medical Treatment*—In most of these cases acute urinary obstruction will be identified as the important accessory factor that causes the acute renal infection to be intensified or prolonged. More often the obstruction is near the renal pelvic outlet (aberrant renal vessels, congenital ureteral stricture, and so forth). The institution of free renal drainage by the passage of a ureter catheter to the pelvis or by nephrostomy is usually followed by regression of the temperature and of the acute toxic manifestations. Yet in some of these cases the process progresses to massive renal suppuration or a localized septic infarct, commonly designated as renal carbuncle. Moreover, secondary perinephritic abscess is not uncommon or the metastatic perinephric abscess without serious renal involvement may disguise as so-called acute pyelitis. In any event, in such hyperacute renal infections one is not justified in calmly standing by and awaiting developments when the initial medical therapy has proved fruitless.

*Disturbances of Urinary Function*—In persistent frequency of urination the inadequate diagnosis of cystitis is all too commonly made. Cystitis is practically never a primary lesion

but is secondary to renal infection, vesical stone or a foreign body, pericystic inflammation, or disease of the bladder outlet, prostate, or posterior urethra. Persistent frequency of urination of the child usually reflects an unrecognized urinary infection and in many cases there is unsuspected renal tuberculosis. In a large number of children said to have enuresis or just a weak bladder, urethrotiginitis is the underlying lesion. Other disturbances of urination, such as persistent dysuria, strangury, the clinical syndrome loosely designated as enuresis, entitle the child to a special urologic consideration. Particularly is this so in enuresis in which group of children urologic examination is indicated when two or three months of medical therapy fails to achieve the desired result. In about 1,000 cases thus studied we found uropathology adequate to explain the symptomatology in approximately 60 per cent of the cases and many of the patients required surgical treatment. While there is little question that fully 95 per cent of the cases of enuresis are functional in origin, in many cases renal infection or other urinary tract disease exists and in 5 instances I had to perform nephrectomy for renal tuberculosis in children referred for examination with the diagnosis of enuresis. Secondary bladder tuberculosis explained the vesical symptoms. Moreover, the incontinence may be explained in cases of an ectopic ureteral opening in the urethra, at the urethral orifice, or in the introitus. A discussion of the neuromuscular disturbances of the bladder does not fall within the province of this presentation.

*Hematuria*—Blood in the urine of a child is most likely to reflect acute nephritis. Tumor, nontuberculous, and tuberculous infection are next in order of frequency. Every child whose hematuria is not due to acute nephritis should be subjected to urologic investigation. Strangely enough in many children examined because of hematuria, the blood was found to come from an ulcerated congenitally strictured urethral meatus.

*Pain in the Renal, Ureteral, Vesical, Urethral, or Genital Areas*—In the upper urinary tract this is usually a matter of hydronephrosis or of ureteral stricture. On the other hand, in children with abdominal pain, especially on the right side, the diagnosis of chronic appendicitis is frequently made. In several children falling in this group, urologic examination has revealed an unsuspected ureteral stricture, with the therapeutic dilatation of the stricture, the general abdominal

# CONSERVATIVE SURGERY IN THE TREATMENT OF RECURRENT SALPINGITIS

HENRY C. FALK, M.D., F.A.C.S., New York City

AS A RESULT of the conservative management of gonorrheal salpingitis, it has become evident that clinical cures can be obtained without resorting to surgery. In the past decade, with the addition of new physical therapeutic agents (fever therapy, Elliott treatment) and chemotherapeutic agents (sulfanilamide and its derivatives), the medical management of this disease has become more effective. Notwithstanding the effectiveness of medical therapy, about 20 per cent of the women with gonorrheal salpingitis eventually come to surgery. In private practice the percentage may be lower, in a large municipal hospital it is usually higher.

Surgery is indicated primarily for one of two reasons: (1) to cure disturbing symptoms such as dysmenorrhea, irregular or profuse menstrual bleeding, etc., (2) to prevent recurrent acute gonorrheal salpingitis, resulting in frequent and severe disabling attacks of pain and fever.

In a large city hospital social and economic factors make medical treatment difficult and frequently inadequate. This results in repeated attacks of acute inflammation brought on by reinfection. Surgery in these patients is directed in a large measure toward the relief and prevention of symptoms that destroy their economic and social independence.

In 1870 Lawson Tait<sup>1</sup> founded the operative treatment of salpingitis. No significant advance has been made in the surgical treatment of this condition since Simpson's paper in 1909<sup>2</sup> when the value of the delayed operation was established.

Salpingectomy is a relatively safe procedure if practiced in accordance with the principles laid down by Simpson. Yet a survey of reported series (Table 1) shows several disadvantages.

1 The mortality rate varies from 1 to 10 per cent. The most important factor in the production of a high mortality rate is operation during the acute phase (Ricci,<sup>3</sup> Aldridge<sup>29, 30</sup>). Operation during the chronic phase has a mortality of from 1 to 2 per cent. This mortality in the hands of qualified surgeons is too high for a disease that does

not threaten life under usual circumstances.

2 There is a high percentage of immediate postoperative morbidity, with delayed convalescence and postoperative indurations and exudates that require prolonged treatment (Norris, 5.8 per cent<sup>14</sup>). Farr and Findley<sup>28</sup> report that 5 per cent of their cases needed reoperation while in the hospital, chiefly for pelvic abscess. In acute cases Aldridge found a high morbidity of 52.5 per cent, whereas in cases that were clinically and microscopically inactive the morbidity was 18.1 per cent.

3 The ultimate postoperative results are only moderately satisfactory. About 20 per cent need subsequent therapy, either medical or surgical. Aldridge in a critical analysis found 19 per cent unsatisfactory results. Norris and Whitehouse report that 5 per cent of all patients needed subsequent gynecologic operation.

4 The incidence of postoperative ovarian cysts, although difficult to determine, seems to be high. In Aldridge's series 5 per cent of the patients were subsequently found to have either cystic ovaries or ovarian cysts.

5 Sampson<sup>3</sup> has called attention to the relatively high frequency of postsalpingectomy endometriosis and ectopic pregnancy in the tubal stump.

6 Technical difficulties often lead to the sacrifice of the ovaries. C. J. Miller,<sup>4</sup> despite advocating conservative surgery, reports that in 300 cases of salpingectomy 218 had unilateral or bilateral oophorectomy.

As a consequence of these deficiencies many gynecologists have become radical in the belief that the retained uterus and ovaries frequently give rise to subsequent symptoms that require reoperation (Drips and Day,<sup>5</sup> Gardner<sup>6</sup>). The literature (Tables 2 and 3) gives the impression that the late clinical results of radical surgery are better than those of simple salpingectomy. However, the high primary mortality and morbidity and the fact that it violates every principle of preserving as much of the pelvic organs as possible in young women are serious objections.

Conservative tubal surgery, i.e., unilateral salpingectomy or plastic operations on the tubes, has also proved unsuccessful (Greenhill<sup>7</sup>). Reinfection often occurs which necessitates a second operation.

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Director of Gynecology, Harlem Hospital.

dehydration consequent thereto, in younger children, an enema should replace catharsis, in older children a mild laxative such as milk of magnesia or a small dose of castor oil is adequate

In the operating room, it is the duty of the pediatrician and the urologist alike to see that the child's body heat, blood, and fluids are conserved. A hot-water bottle or electric pad for accessory body heating is desirable. Everything should be in readiness for the operation before the anesthesia is started since children stand anesthetics poorly. Post-operatively, the administration of fluids (blood, water, glucose, and saline) and accessory body heating will minimize morbidity during convalescence. We attempt to return the child to his regular diet as soon as it can be tolerated.

Following surgical treatment, and particularly of the upper urinary channels, the eradication of urinary infection is likely to be an important problem in the completion of the cure. The administration of the chosen antiseptic may wisely be supervised by the pediatrician and notably when a sulfanilamide compound is employed. To repeat: no child

should be discharged as cured of urinary infection until at least two negative cultures of a catheterized specimen have been obtained.

### Summary

We have discussed the clinical and physiologic reasons for close cooperation between pediatrician and urologist in the urosurgical treatment of children. It is the responsibility of the physician who first sees the child to recognize that a urologic condition probably exists and to know the indications for special urologic examination as herein outlined. An early diagnosis often permits a conservative operation to be performed, delayed diagnosis too often spells nephrectomy and in some cases, death. Such preventable disasters must be considered the fruits of medical neglect. Finally, in the urosurgical management of infants and children, the urologist urgently needs the close cooperation of the pediatrician and as greatly as the pediatrician needs the assistance of the urologist for the special technical examinations necessary to establish a correct anatomic diagnosis in genitourinary tract disease.

140 East 54th Street

### DO YOU MEAN ME?

Are you an active member, the kind that would be missed,  
Or are you just contented that your name is on the list?  
Do you attend the meetings, and mingle with the flock,  
Or do you stay at home and criticize and knock?  
Do you take an active part to help the work along,  
Or are you satisfied to be the kind that "just belong"?  
Do you ever go visit a member that is sick?  
Or leave the work to just a few and talk about the "clique"?

There's quite a program scheduled that I'm sure you've heard about,  
And we'll appreciate if you, too, will come and help us out.  
So come to the meetings often, and help with hand and heart.  
Don't be just a member, but take an active part.  
Think this over, member, you know right from wrong,  
Are you an active member, or do you just belong?

—ANON

*Journal, Amer. College of Pro*

### "TEACHING DAY" AT POUGHKEEPSIE

Teaching Day on Malignant Disease, arranged for the Dutchess County Medical Society, will take place at Poughkeepsie on April 9. At four o'clock Dr. Arthur Purdy Stout, associate professor of surgery, College of Physicians and Surgeons, Columbia University, will talk on "Problems in Tumor Diagnosis". At five o'clock Dr. George E. Binkley, attending surgeon, Memorial Hospital, New York City, will be heard on "Carcinoma of the Rectum". In the evening, at eight-thirty, Dr. Cornelius P. Rhoads, director, Memorial Hospital, New York City, will speak on "Mode of Action of Cancerogenic Chemicals".

### THE DEADLY RUT

Perhaps the most insidious danger to which a professional man is exposed is that of getting into a rut. To follow methods that experience has shown to be successful is sound common sense, but when we assume that the best way has been found, and cease active efforts to enlarge our knowledge and improve our technic, we are in a rut.

The line between conservatism and fossilization may be a fine one, but it is vitally important to recognize it.

—Adapted from *United Business Service*,  
by *Clinical Medicine*

endometrium, coexisting tubal inflammation was present, and usually gonococci could also be recovered from the tube. Recently, an opportunity presented itself to examine bacteriologically the tubes, ovaries, uterus, and cervix of a patient who had undergone fever therapy. In this patient the temperature, sedimentation rate, and blood count were normal for three weeks, and the cervical and urethral smears that had been positive for gonococci became negative before operation was performed. However, the sudden growth of an adnexal mass after fever therapy made operative intervention seem necessary. At laparotomy this was found to be a simple ovarian cyst. On the opposite side a tubo-ovarian abscess was present. Since both ovaries were destroyed, hysterectomy with bilateral salpingo-oophorectomy was performed. Surprisingly, cultures of the endometrium, endosalpinx, and left ovary were positive for gonococci, although cultures of the extirpated cervix were sterile.

Several other modes of infection are theoretically possible, i.e., hematogenic and lymphogenous. Gonococcal bacteremia occurs rarely and is almost always secondary to pelvic inflammation.<sup>10</sup> That the reverse may occur is possible but highly improbable. It has been pointed out that the gonococcus is an organism that grows best on epithelial surfaces. Under ordinary circumstances it does not penetrate deeply, except by continuous growth along the epithelium of glands (endocervix in women, and prostate in men). The lymphatic apparatus of the pelvis is extremely abundant, yet gonorrheal parametritis is rare. When it does occur it is due to an exudate from the tubes dripping onto the broad ligament or cul-de-sac, thereby producing inflammation by contiguity. Clinically, the term "parametritis" is often loosely used to denote any type of indurated adnexal masses.

However, at operation for gonorrheal salpingitis, true infiltration of the broad ligament itself (excluding peritoneal adhesions, etc.) will not be found in either acute or chronic cases unless there has been direct extension of the infection to the peritoneal surface of the broad ligament. Therefore, extension via the lymphatics is improbable.

As a result it seems logical to believe that recurrent salpingitis is caused by reinfection extending upward to the tubes along the endometrium from the lower genital tract and that any operation that would sever this epithelial continuity would prevent recurrent salpingitis.

Several clinical facts seemed to corroborate this theory.

1 Several cases of fibroids with pus tubes were seen, where at operation, because of technical difficulties or the poor condition of the patient, simple supracervical hysterectomy was performed. All patients became free of symptoms of pelvic infection. In 2 cases, however, secondary operation was thought to be safer for the patient—at laparotomy marked regression in the tubal inflammation had occurred.

2 Despite the fact that salpingitis is known to be bilateral, patients were repeatedly seen in whom there was a pyosalpinx on one side and an apparently normal tube on the other. However, examination of the apparently normal tube proved that the lumen was completely obliterated at the cornual end so that the epithelial extension from the uterus to the ampulla of the tube was anatomically impossible.

3 A number of patients were observed who had been sterilized by cornual resection because of various medical indications. Several of these patients developed an acute cervical gonorrhea, but in no instance did salpingitis develop.

4 Little<sup>11</sup> and Holden<sup>12</sup> had shown that cure of salpingitis could be obtained without extirpation of the tubes.

As a result of these considerations cornual resection was instituted as a simplified conservative operation in the treatment of recurrent salpingitis with the following qualifications:

(1) It does not replace the conservative medical management of salpingitis but is indicated only in those instances where recurrent attacks of salpingitis cannot be prevented by prophylactic and medical measures.

(2) It does not cure gonorrhea of the lower gynecologic tract but promotes healing of existing tubal inflammation and prevents recurrent attacks of salpingitis.

(3) It cannot be performed in the face of ovarian infection, this complication demands salpingo-oophorectomy.

(4) It cannot be performed until Simpson's requisites have been satisfied.

During the initial phase of this study, in accordance with investigations of Curtis on the bacteriology of the tube,<sup>13</sup> it was believed that after several weeks of normal temperature the tubes, in the majority of cases, were sterile. As the investigation progressed, bacteriologic studies were made on the excised tubes, in 16 cases the cultures of the tubal wall were 100

TABLE 1—CONSERVATIVE TUBAL OPERATIONS  
(Salpingostomy Unilateral or Bilateral Salpingectomy)

	Name	No of Operations	Mortality, Percentage
1909	Simpson <sup>3</sup>	465	0 8
1910	Giles <sup>14</sup>	144	4 8
1910	Landau, L. <sup>14</sup>	780	2 0
1911	Thaler <sup>14</sup>	262	5 3
1912	Martin, C. <sup>17</sup>	385	3 8
1913	Norris <sup>14</sup>	321	2 1
1919	Fraenkel, K. <sup>19</sup>	3,624	3 9
1921	Heynemann, Th. <sup>20</sup>	279	0
1923	Werer and Stigl- bauer <sup>21</sup>	94	2 1
1926	Compilation cited by Heynemann, Th. <sup>22</sup>	950	2 5
1926	Cherry <sup>22</sup>	832	4 9
1926	Peham and Am- reich <sup>24</sup>	91	0
1926	Hartman <sup>25</sup>	85	0
1927	Whitehouse B. <sup>26</sup>	177	1 2
1928	Rice <sup>27</sup>	200 Nonoperative	0
		200 Clinically non- purulent	0 5
		200 Purulent sal- pingitis	14 5
1929	Farr and Findley <sup>28</sup>	403	3 42
1930	Aldridge <sup>29, 30</sup>	99 Microscopi- cally and clinically ac- tive	13 1
		89 Microscopi- cally active and clini- cally inac- tive	3 3
		878 Chronic inac- tive	2 8

TABLE 2—RADICAL SURGERY  
(Total or Supracervical Hysterectomy with Bilateral Salpingectomy)

	Name	No of Operations	Mortality Percentage
1910	Giles <sup>14</sup>	23	17 4
1911	Thaler <sup>14</sup>	108	8 6
1913	Norris <sup>14</sup>	89	5 7
1919	Fraenkel K. <sup>19</sup>	372	8 6
1921	Heynemann, Th. <sup>22</sup>	195	4 1
1923	Werer and Stiglbauer <sup>21</sup>	194	6 7
1926	Peham and Amreich <sup>24</sup>	137	5 8
1926	Hartman <sup>25</sup>	16	18 7
1927	Whitehouse <sup>26</sup>	137	7 5

TABLE 3—CLINICAL CURES

	Name	Type of Operation	Cured Percentage
	Thaler <sup>14</sup>	Radical	93 5
		Conservative	73 9
	Werer and Stiglbauer <sup>21</sup>	Radical	87 8
		Conservative	76 9
	Probstner	Radical	88 1
		Conservative	70 6
	Latsko	Radical	91 6
		Conservative	50
	Henkel	Radical	80 9
		Conservative	50 6
	Fraenkel, K. <sup>19</sup>	Radical	90 3
		Conservative	60 3
	Hartman <sup>25</sup>	Radical and con- servative	81 28
	Whitehouse <sup>26</sup>	Radical and con- servative	80
		Conservative	80
	Farr and Findley <sup>28</sup>	Conservative	80 9
	Aldridge <sup>29, 30</sup>	Conservative	80 9

As a result, therefore, of dissatisfaction with the end results of both the so-called conservative and radical operation, a large series of cases of tubal infection were studied on the gynecologic service of Harlem Hospital.

It is well recognized that not every case of gonorrheal infection in women results in salpingitis. The primary portals of entry of the gonococci in women are the urethra, Bartholin's glands, and the cervix. Of these the cervix is the most important. The gonococcus finds an ideal location in the deep, poorly oxygenated recesses of the racemose cervical glands. The infection may be confined to these areas and never give rise to tubal inflammation. Not infrequently, however, immediately following menstruation, the gonococci ascend to the tube and give rise to salpingitis.

Microscopic examination of the extirpated gonorrheal tube shows it to be primarily an endosalpingitis, in which the tubal villi bear the full brunt of the disease. In early acute cases (primary attack) the folds become markedly swollen with polymorphonuclear leukocytes. Pus appears in the lumen of the tube. In early cases the muscularis and serosa are little inflamed. At a later stage the inflammation travels from the lumen outward to the serosa. With resolution the exudate in the lumen and the folds is gradually absorbed, and on gross and microscopic study the tube

may appear normal. Not infrequently, however, the endosalpinx is found to be the seat of a follicular salpingitis, the end result of a mild infection. Repeated attacks cause marked thickening and infiltration of all the layers of the tube, although again it is the endosalpinx that is most severely inflamed.

From microscopic examination it seems reasonable to assume that the mode of extension in gonorrheal infection is via the surface epithelium or possibly the subepithelium. The sequence of extension is endocervicitis, endometritis, and endosalpingitis. The existence of an acute and subacute gonorrheal endometritis has been demonstrated by a number of investigators. Werthem,<sup>8</sup> in the days when acute gonorrheal cases were operated upon, was able to culture the gonococcus from the endometrium in 8 of 18 cases. A most careful bacteriologic and histologic study was reported by Curtis.<sup>9</sup> Of 46 women with a history or gross evidence of any pelvic infection, the gonococcus was recovered in 6 instances. Definite histologic evidence of subacute endometritis as evidenced by polymorphonuclear and round-cell infiltration was also present in these 6 cases. Two additional facts are noteworthy: (1) In spite of the fact that all patients were believed to be free of any active infection at the time of operation, 6 cases gave a positive gonococcic culture, (2) in all patients with positive cultures from the

minimal surgery, owing to a primary mistake in diagnosis

**End Results (Chart 3)**—Of the 350 patients 70.3 per cent were observed in the follow-up clinic for a period varying from four months to five years. The results on the 256 patients seen were classified in these groups

1 **Anatomic**—Cured 78 per cent, improved 21 per cent, failures 2 per cent. Any palpable masses (ovarian or tubal), retroversion, or persistent induration were classified as improved or failures, depending upon the degree of pathology present. It is reasonable to expect that in many cases complete resolution may never be obtained or only at a late date.

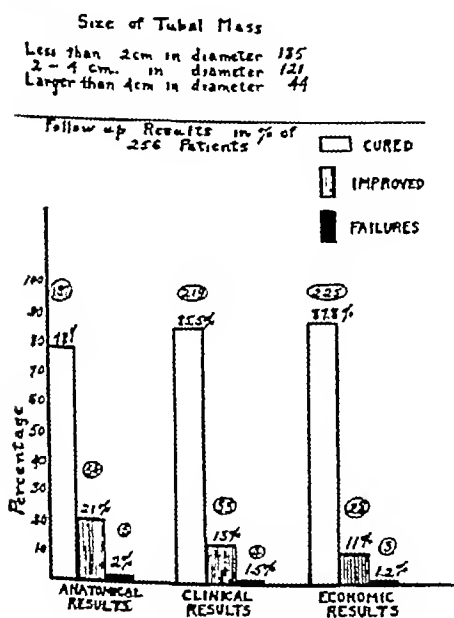


CHART 3

2 **Clinical**—Cured 85.5 per cent, improved 13 per cent, failures 1.5 per cent. The chief clinical complaints are pain and irregular bleeding. Frequently, leukorrhea necessitated treatment in the endocervicitis clinic, but leukorrhea continuing after treatment was considered to militate against the desired clinical result.

3 **Economic**—Cured 87.8 per cent, improved 11 per cent, failures 1.5 per cent. This is believed to be the most important criterion of the success or failure of cornual resection and it is gratifying that only 3 of the 256 patients who were traced felt that they were unable to work following this operation.

4 **Reoperations**—To our knowledge no

# Postoperative Hospitalization

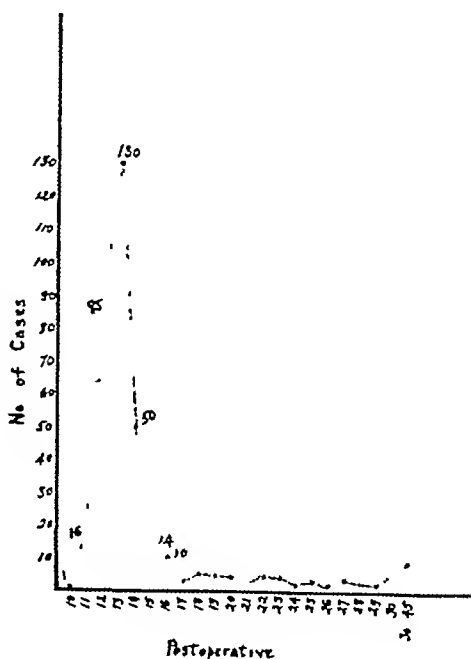


CHART 4

patient has been reoperated upon in any hospital, municipal or private, for a recurrence of the salpingitis. Because of the economic status of these patients it is likely that further treatment would be sought in a municipal hospital. However, there has been no request for information concerning these patients. Three patients were reoperated upon on the gynecologic service at Harlem Hospital. In 1 patient, a laparotomy for upper intestinal obstruction was performed. Examination of the pelvis showed it to be clear. In 2 other patients, laparotomy was performed for persistent pain. In both, a Poole suspension of the ovaries had been performed, and apparently the fixation of the ovaries caused tension and pain. The tubes were excised in both instances at reoperation. A small hydrosalpinx, measuring 1 cm in diameter, was present in 1 case, in the other, the tubes were microscopically and macroscopically normal.

## Conclusions

1 The sequence of extension of a gonorrheal infection is endocervicitis, endometritis, and endosalpingitis.

2 Cornual resection is offered as a simple operation for the clinical cure of recurrent salpingitis by severing the continuity

Distribution by Age

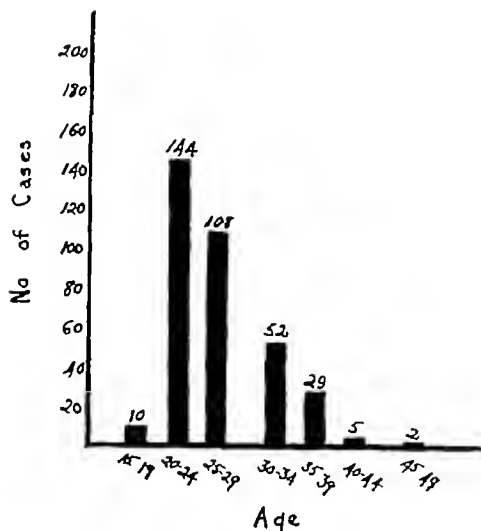


CHART 1

per cent positive for bacteria. In all of these cases the temperature, sedimentation rate, and white blood count had been normal for two to three weeks before operation. In 11 of the 16 cases gonococci were found five times as the sole organism. In the remaining cases a variety of organisms—streptococci, staphylococci, colon bacilli, diphtheroids, etc.—were present. The pus in the lumen of the tube was sterile. Notwithstanding these bacteriologic findings, the original deduction—namely, that the tube does not spontaneously reinfect itself but that reinfections invariably proceed from the lower genital tract—still seems to be valid. To our knowledge there has been no case of recurrent infection of the tube following cornual resection. At the present time, further bacteriologic and immunologic studies are being made to determine why reinfection of the tube does not occur from the bacteria present in the tube wall itself, this would seem to be due to bacteriostatic tissue factors of which almost nothing is known at present.

### Clinical Material

To date, over 400 cases of cornual resection have been performed at Harlem Hospital. The following report is based upon 350 cases operated upon during the period from March, 1934, to November, 1939, so that a minimum follow-up observation of four months has been obtained.

**Age (Chart 1)**—The youngest patient was 17 and the oldest was 49 years of age, 248

cases were between 20 and 29 years of age. Despite the apparent youthfulness of this group, they all had had repeated attacks of salpingitis. No patient was operated upon during the first or second attack.

**Preoperative Hospitalization (Chart 2)**—Before any surgery was instituted Simpson's prerequisites were satisfied. This required from one to four weeks of preoperative hospitalization in the majority of the cases, not infrequently, five to six weeks was necessary. In 20 cases, as a result of a diagnostic error (ectopic, twisted ovarian cyst, etc.), the operation was performed within four days of hospitalization.

Preoperative Hospitalization in Days

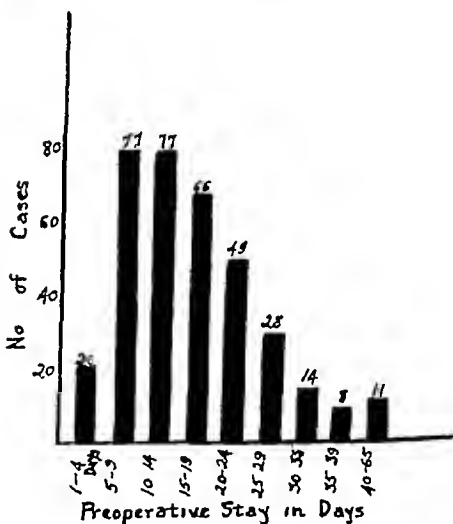


CHART 2

**Size of Tube at Operation (Chart 3)**—In 185 patients the tubes were less than 2 cm in diameter, in 121, from 2 to 4 cm in diameter, and in 44, over 4 cm in diameter.

**Postoperative Morbidity (Chart 4)**—Three hundred and six or 87.4 per cent of the patients were discharged from the tenth to the sixteenth postoperative day. As in other reported series (Rucci,<sup>27</sup> Aldridge<sup>28</sup>) there was a marked correlation between the acuteness of the salpingitis at operation and the postoperative morbidity. The greatest postoperative morbidity occurred in those patients who had had the shortest preoperative hospitalization and where the operation was not one of choice but one of necessity or a desire to perform

# SARCOMA OF THE UTERUS

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UTERINE sarcoma is a malignant tumor consisting of cells of mesodermal origin. These tumors are usually classified quite properly according to their origin and pathologic characteristics. Most authors attempt to identify them as originating from endometrial or myometrial tissues, with subdivisions according to their architectural structure. Ewing<sup>1</sup> describes uterine sarcomas as (1) circumscribed primary sarcoma, chiefly subserous or interstitial, (2) diffuse sarcoma, chiefly submucous or infiltrating the wall and parametrium with metastases and subject to hemorrhage and necrosis, (3) polypoid sarcoma of the body of the cervix (so-called botryoid sarcoma), (4) extensive single or multiple myosarcoma, and (5) secondary sarcoma in myomas. Frank<sup>2</sup> mentions as usual types muscle cell, spindle cell, round cell, giant cell, and those with secondary changes in myoma, also the special types—angiosarcoma, perithelial cell sarcoma, and melanosisarcoma.

This discussion will deal with the clinical manifestations of the disease, the therapy employed, and the results obtained. It is based on a statistical study of the patients with undisputed sarcoma of the uterus who have been treated on the Gynecological Service of Memorial Hospital during the years 1928 to 1939, inclusive. Twenty-four such patients were available. Four other patients were sent to Memorial Hospital during this period with the pathologic diagnosis of uterine sarcoma, but the diagnosis was not confirmed by our pathologic department. These patients will be referred to again but are not included in this statistical study. Also, certain other patients (infants) with angiosarcoma of the vagina and those with retroperitoneal sarcomas involving the entire pelvis are excluded from this study.

Table 1 shows the relative rarity of sarcoma of the uterus by comparing its incidence with that of other uterine lesions treated at Memorial Hospital during the same time period. Naturally, this comparative incidence will vary in different clinics. In discussing the relative frequency of sarcoma to carcinoma in the uterus, Frank<sup>2</sup> quotes Evans<sup>3</sup> in stating

the incidence to be 1 to 40 and Vest<sup>4</sup> as 1 to 37.2. Geist<sup>5</sup> found 4.07 per cent sarcoma in 540 patients with myomas, Kelly<sup>6</sup> reported 1.2 per cent sarcomas in 1,400 myomas. Warner<sup>7</sup> states that of 7 per cent cellular myomas only 2 per cent were positive sarcomas. The relative incidence of sarcoma of the cervix to carcinoma of the cervix is stated by Meyer<sup>8</sup> to be 1 to 29, by Gessner,<sup>9</sup> 1 to 8.

Table 2 shows that sarcoma of the uterus occurs most frequently during menopausal and early postmenopausal age periods.

Table 3 presents a possible connection between parity, abnormal menstruation, and sarcoma of the uterus. Over half of these patients had had no pregnancies, 8 had completed the menopause (1 at 33 years of age), 1 (57 years old) with congenital absence of the vagina had never menstruated, 4 of the married women without pregnancies had had extremely irregular periods.

Table 4 indicates how infrequently the diagnosis of sarcoma is correctly made, clinically, before a biopsy has been taken.

Table 5 suggests the stage of the disease when the patients were received at Memorial Hospital. Only 5 patients (20.8 per cent)

TABLE 1—INCIDENCE OF UTERINE SARCOMA TO OTHER UTERINE LESIONS AT MEMORIAL HOSPITAL, 1928-1939

Diagnosis	No. Patients	Incidence
Fibromyoma	1,135	1-47
Nonmalignant uteri	1,333	1-55
Carcinoma of corpus	482	1-20
Carcinoma of cervix	1,716	1-81
Total carcinoma of uterus	2,198	1-91

TABLE 2—AGE INCIDENCE OF SARCOMA OF THE UTERI

Age	No. Patients	Percentage of Total
21-30	2	8.8
31-40	2	8.8
41-50	9	37.5
51-60	6	25.0
61-70	4	16.6
71-80	1	4.7
Total	24	100.0

TABLE 3—INFLUENCE OF PARITY AND MENSTRUATION ON SARCOMA OF THE UTERUS

Classification	Married	Single	Total
No. patients	20	4	24
Pregnancies	11		11
No pregnancies	9	4	13
Menopause	6	2*	8
Irregular menstruation	5	2*	7

\* One patient never menstruated—57 years old with congenital absence of vagina.

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 9, 1940.

3 Three hundred and fifty cases are reported with 85 per cent clinical cures

1 West 86th Street

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## THE DOCTOR IN UNIFORM

Military service has a strange effect on most physicians, said Dr Creighton Barker, of New Haven, addressing the Connecticut Hospital Association a few weeks ago. It causes them, he remarked, to suffer from what another has lately called a "cactus complex," which "is a bristling thorny untouchability usually accompanied by several stigmas, small shoebrush mustaches, grapelike pendulous tumors dangling from the left wrist, and a dermatosis resembling a small watch hidden by the cuff." All these are intermittent sources of irritation producing sudden jerky movements, usually crooking of the elbow and frequent nervous inspection of the wrist to see what time it is for no reason at all. Our

usually mild and quiet colleagues, as soon as they put on a uniform, will develop the idea that to be consistent they must develop a certain fierceness and barking speech and heel-clicking smartness. A brief course in deportment is suggested while there is yet time. I submit, too, that tailors should be more carefully controlled. There is something comfortable and confidence-inspiring in a family physician whose bedside raiment is characterized by a wholesome indifference, but this same man, distorted, compressed, and caused to bulge in a uniform that has been designed and sewed under the influence of war hysteria, cuts a figure that is bad for the morale of the old regiment.

## EXAMINATIONS—AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The general oral and pathologic examinations (Part II) for all candidates (Groups A and B) will be conducted at Cleveland, Ohio, by the entire board on Wednesday, May 28, to Monday, June 2, 1941, inclusive, prior to the opening of the annual meeting of the American Medical Association in Cleveland.

Formal notice of the time and place of these examinations will be sent each candidate several weeks in advance of the examination dates.

Candidates for re-examination in Part II must

make written application to the Secretary's Office before April 15, 1941.

The board requests that all prospective candidates who plan to submit applications in the near future request and use the new application form which has this year been inaugurated by the board. The secretary will be glad to furnish these forms upon request, together with information regarding board requirements. Address Dr Paul Titus, secretary, 1015 Highland Building Pittsburgh (6), Pennsylvania.

## NOTICE OF TWO LECTURES

The New York Polyclinic Medical School and Hospital wishes to announce the following:

Dr Walter C Alvarez of the Mayo Clinic will deliver a lecture on Friday, April 18, at 2 30 P.M., on "Puzzling Types of Abdominal Pain."

Dr Ralph Moore Tovell, Hartford Hospital, Hartford, Connecticut, will deliver a lecture on Friday, May 2, at 5 30 P.M. on "Regional Anesthesia."—F H Dillingham, M D, Medical Executive Officer.

TABLE 10A—METHOD AND DOSAGE USED IN ROENTGEN THERAPY

No Patients	Method	Portals			Total r
		No	Daily r	Ports each day	
9*	Massive	8	750	1	4,500
3	Divided	4	500	1	4,000
4	Divided	6	500	1	9,000
2	Pyramidal	6	100-350	2	10,200

Two hundred kilovolts 30 milliamperes, T S D 70 cm. portals 14 by 11 cm Filtration, 0.5 mm Cu plus 1 mm Al

\* Two patients had this cycle repeated after three months

TABLE 11—COMPLICATIONS

Bladder ulceration	2	Necrosis of rib	2
Vaginal fistula	3	Pathologic fracture of femur	1

TABLE 12—METASTASES

Site	No
Lung*	5
Rib,	
femur	1
Vaginal and abdominal	3
Myocardium	
pericardium	1

\* Six patients did not have x-ray of chest.

received a total of 80,000 milligram hours. Three of these also received gold seeds or applicators. The roentgen therapy is outlined as to methods and dosage used in Table 10A. Two of these patients also received 2,000 r to the ribs and chest lesions, and 1 patient received 750 r to a pathologic fracture of the left femur. In view of the fact that clinical regression of the disease did not occur in any of these patients, no one of the methods of therapy here used can be considered superior to the others. Since 6 of the patients treated by x-rays and the 6 treated with the element radium pack are known to have received all the therapy that can be given by the methods used without serious normal tissue damage, it must be assumed that sarcoma of the uterus is not sensitive to radium or to x-rays in a comparative sense. Possibly, with further development or with variation of the several therapy factors, such as use of the million-volt machine, a more optimistic estimation may replace the present pessimism as to the futility of irradiation therapy for sarcoma of the uterus.

The complications here considered (Table 11) express the tendency of extension and metastases. It has been previously shown<sup>10, 11</sup> that vaginal fistulas are more often the result of extension of the disease than of the effect of irradiation therapy.

Lung metastases were the ones most frequently encountered (Table 12). It is to be noted that 6 of the patients did not have chest plates taken.

Table 13 shows no patient to have lived more than four years. While a variety of doses of irradiation have been used, no patient under the method used has shown enough response to encourage any optimism as to the radiosensitivity of sarcoma of the uterus.

Of the 4 patients sent to Memorial Hospital as having sarcoma (cases disputed by our pathologic department), 2 received treat-

TABLE 13—LENGTH OF LIFE FROM FIRST ADMISSION TO MEMORIAL HOSPITAL

Dead	18	Living	6
Less than 6 mo	8	30 mo	2
6-12 mo	6	22 mo	1
12-18 mo	1	14 mo	2
18-24 mo	0	4 mo	1
24-36 mo	1		
36-48 mo	0	Average 19.0 mo	
48 mo	2	Four patients admitted within one month from time of operation	
Av 10.6 mo		One patient admitted nine months after operation	
		One patient our own operation	

ment and 2 were not treated, but all 4 are alive and free from disease more than four years (1, six years). It must be assumed that they did not have sarcoma.

In studying the 6 patients who are still alive, it is of interest to note that only 1 had not had some operative procedure before coming to Memorial Hospital. That case was thought to be a carcinoma of the corpus uteri and was so treated, i.e., 750 r were given to four pelvic portals and two weeks later 4,000 millicurie hours were administered by the insertion of a corpus string into the uterine cavity. At this time the biopsy (Fig 1) obtained with a curet proved to be a sarcoma of the endometrial type, five months later the hysterectomy (Fig 2) showed necrosis of the tumor but with a considerable amount of active tumor tissue still present. This patient has remained well for twenty-two months.

Figs 3 and 4 show a similar uterus of the endometrial type treated by the author, by hysterectomy alone, at another hospital (no radium or x-rays at any time), and the patient had no evidence of the disease four and a half years later.

The 2 living patients who are alive and free of evidence of the disease thirty months from their admission to Memorial Hospital each had simple removals of cervical and vaginal

TABLE 4—PREBIOPSY DIAGNOSIS

Diagnosis	Before Memorial Hospital	No Diagnosis	At Memorial Hospital	Total
Fibromyoma	12		2	
Carcinoma of corpus			1	
Sarcoma	2		1	
Ovarian cyst	1			
Polyp	2			
No diagnosis made	—	3	—	
Total	17	3	4	24

TABLE 5—OPERATIONS BEFORE COMING TO MEMORIAL HOSPITAL

Hysterectomy	13	Dilatation and curettage	2
Myomectomy	2	None	5
Removal of polyp and vaginal tumor	3		

Two patients had two operations 1 patient had operation and radium

TABLE 6—OTHER CONDITIONS PRESENT

Condition	No Patients
Congenital absence of right breast	
infantile right hand	1
Congenital absence of vagina	1
Basal cell carcinoma of face	1
Bartholin's abscess	1
Hypertension	1
Fibroids associated with the sarcoma	14

had not been operated upon at least once before coming to us for treatment

Table 6 indicates the possible association of sarcoma with congenital maldevelopment and with uterine fibromyomas. One patient developed basal cell carcinoma of the face eighteen months after her hysterectomy for sarcoma, and she is being treated for the basal cell carcinoma by irradiation.

Table 7 tabulates the first symptoms noticed by these patients. While bleeding is the predominant first symptom, it should be noted that pain was noticed first by only one-fifth of the patients and that pain alone or associated with some other symptom was noticed by only one-third of this group. Since pain is always a late symptom of uterine malignant tumors and since ascites (also an advanced symptom) was first noted alone or with some other symptom by only one-third of the group, one cannot assume that a large portion of these patients were in the advanced stage of the disease when they were first seen at Memorial Hospital. This need not necessarily infer delay in diagnosis or neglect to institute prompt therapy, but it does suggest the rapidity of progress and development of the disease.

Table 8 with its presentation of the brevity of symptoms indicates the rapidity of progress of the disease from the time of the first

TABLE 7—FIRST SYMPTOMS NOTED

First Symptoms	No Patients
Bleeding	17
Abdominal enlargement	3
Urinary symptoms	1
Pain	5
Lung hemorrhage	1
Ascites	4
Bleeding and pain	2
Ascites and abdominal enlargement	4
Swelling and pain	1
Total patients	24

TABLE 8—DURATION OF SYMPTOMS

Duration	No Patients	Percentage
More than 1 yr	2	8.3
More than 6 mo	7	29.1
Less than 6 mo	17	70.1
Less than 4 mo	16	66.6
Less than 2 mo	11	45.8

TABLE 9—SIGNIFICANCE OF SIZE OF UTERUS

Size not recorded	4
Larger than twice normal size	14
Size of 3 1/2 months' gestation or larger	0
1-20 lb	
1-17 lb	
1-2 lb	

TABLE 10—TREATMENT AT MEMORIAL HOSPITAL

Hysterectomy	1	All three also received irradiation
Dilatation and curettage	2	
Irradiation		
15		
Radium		All 24 cases received x ray or element pack
Gold seeds and/or applicators	11	
Element pack	0	
X-ray	18	
Both x-ray and radium	9	

Only 5 patients had not been operated upon or irradiated before coming to Memorial Hospital.

symptom, for more than two-thirds had symptoms for less than six months and only 2 patients had any symptoms for as long as one year.

In considering the significance of the size of the uterus-containing sarcoma (Table 9), it must be remembered that 14 patients in this series were known to have associated myomas. However, these rapidly growing tumors are known to attain large dimensions in a short period of time.

Table 10 shows the treatment received by these 24 patients at Memorial Hospital. All patients were treated by x-rays or by the 4-Gm radium element pack. Nine received both x-rays and radium (gold seeds or intra-uterine applicator). The 6 patients who were treated with the element pack each received 160,000 milligram hours administered at 15 cm distance, 8,000 milligram hours being given daily to one field, alternating between the anterior and posterior fields, each of which

factor in sarcoma of the uterus. The high incidence of associated myomas may also be significant in this respect.

3. The possibility of cellular but benign myomas being called sarcoma must be considered in any reported series.

4. The rarity of clinical diagnosis before biopsy, the absence of symptoms of advanced stage of the disease when diagnosed, the brevity of symptoms, the size of the uterus, and the early, fatal termination, all point to the rapidity with which growth and metastases take place.

5. Surgery is still the least harmful method of therapy for sarcoma of the uterus. It is only suitable for the stage if, and when, the disease is limited to the uterus. Postoperative external irradiation, to date, has shown no effect on the disease to justify its continuation with the present methods employed. Possibly further developments in technique will necessitate a reversal of this opinion.

107 East 67th Street

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FIG 4 Sarcoma of the uterus

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## OLD DR. KILDARE GOES INTO PRACTICE

Picked by J. P. S. from a movie magazine

Having been a medicine man in six Kildare pictures, you can bet your bottom dollar that Ayres hasn't been asleep on the job. He has read the *Materia Medica* through twice, has romped through a library on surgery, and when last heard from was mastering the latest whimsies in the art of diagnosis. One of the Hollywood legends is that once Dr. Lew walked up to a total stranger, talked to him five minutes, and informed him gently that he was suffering from a brain tumor. His hunch proved right.

So studious is Ayres about his role of James Kildare, M.D., that he has haunted hospitals to check up on physicians' habits, has talked with interns until wee hours in the morning, has watched operations by the dozen, and has even compared his bedside manner with those of established practitioners.

—J.A.M.A.

## LECTURES ON HEMORRHAGE

Dr. Albert F. R. Andresen, of the Department of Medicine of the Long Island College of Medicine, has arranged a course of lectures on hemorrhage for the St. Lawrence County Medical Society—Ogdensburg, New York, 12:30 P.M.—and for the Jefferson County Medical Society—Watertown, New York, at 6:30 P.M.

March 27 "Hematuria," Dr. John J. Botstone, clinical professor of urology, Brooklyn, April 3 "Gastrointestinal Hemorrhage," Dr. A. F. R. Andresen, professor of clinical medicine, Brooklyn, April 10 "Uterine Hemorrhage," Dr. Harvey B. Matthews, clinical professor of obstetrics and gynecology, Brooklyn, April 17 "Pulmonary Hemorrhage," Dr. Richard H. Bennett, clinical professor of medicine, Brooklyn, April 24 "Hemorrhages of Pregnancy," Dr. Mervyn B. Armstrong, assistant clinical professor of obstetrics and gynecology, Brooklyn.

Kentucky is losing physicians. In 1914 it had 3,621, in 1939 only 2,236. Two counties have but one each. Its only medical school is of the first grade but does not graduate enough men to meet the shrinkage.

The Annual Spring Clinical Day of the University of Buffalo Medical School will be held at the Hotel Statler, Buffalo, April 5, 1941. The program consists of six nationally known speakers and a group of thirty exhibits.

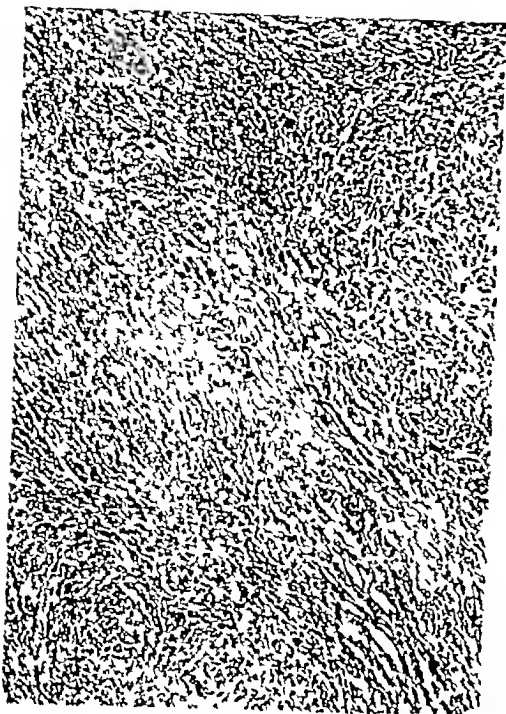


FIG 1 Sarcoma of the uterus



FIG 2 Sarcoma of the uterus

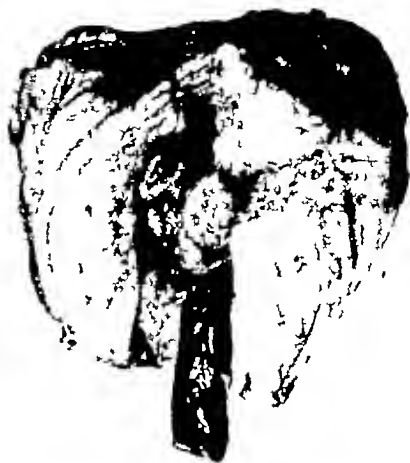


FIG 3 Sarcoma of the uterus

tient has had a complete disappearance of the lesion. However, the 2 patients in the group now dead who lived forty-eight months each were treated in a similar manner and in addition had heavy external irradiation with the 4-Gm radium element pack (160,000 milligram hours at 15 cm), and both eventually died of the disease. It is of interest in view of the recent report of Amolsch<sup>12</sup> that none of these polyps showed myxomatous tissue.

It would seem that the best treatment for sarcoma of the uterus is complete hysterectomy, with any hope for cure to depend on the rare, early, accidental discovery of sarcoma, as well as on the type encountered. Certain cases that had a small cervical stump remaining have been treated because of the clinical appearances of recurrence in the stump, but the biopsy reports in all but 1 case have been shown to be merely chronic cervicitis. In view of the findings, postoperative external irradiation or the local treatment of a cervical stump is not justified without positive evidence of the disease.

### Conclusions

1 While the dangers of drawing too positive conclusions from the statistical study of so small a group (24 patients) are recognized, the relative rarity of uterine sarcoma incidence as compared with the incidence of other uterine lesions seems to justify this study.

2 The predominant incidence at menopausal and early postmenopausal age, the tendency to irregular menstruation and sterility, and the incidence of congenital maldevelopments suggest an endocrine etiologic

polyps which were shown to be myosarcoma. One of these had an incomplete removal of the polyp. One biopsy of the base of the polyp showed myosarcoma, and, after completion of removal of the polyp and insertion of gold seeds (1,125 millicurie hours), the pa-

## 2 Failure of sulfanilamide therapy

3 Improvement coincident with administration of sulfapyridine This may not have been

the result of therapy, but it suggests further trial with sulfapyridine in tularemia

The laboratory work was done by Dr Garner S Scullard, of Watertown, New York.

## LABORATORY AIDS IN THE DIAGNOSIS OF BACTERIEMIA

Bacteremia, the presence of bacteria in the blood stream, may be a transitory and clinically inconspicuous sequel of such procedures as instrumentation of an infected urinary tract or surgical intervention in an area of infection. In a second group of conditions, bacteremia is a frequent incidental occurrence, for example, in typhoid fever, pneumonia, undulant fever, meningococcal meningitis, and gonorrheal arthritis. A third group comprises cases in which bacteremia and its consequences dominate the clinical picture. Such cases are designated sepsis (the term septicemia is often used synonymously), most of them are found in one or another of the following categories grouped according to primary focus and portal of entry

(A) Otitis media and mastoid infection, with or without meningitis these conditions give rise to numerous cases of sepsis. The microorganisms most commonly found are hemolytic streptococci, pneumococci, and staphylococci. (B) Carbuncles, furuncles, and cellulitis sepsis following these infections is generally due to staphylococci or hemolytic streptococci, the case fatality rate is high. (C) Osteomyelitis here again hemolytic streptococci and staphylococci are the most frequent incitants. (D) Postpartum and postabortion infections hemolytic streptococci, nonhemolytic anaerobic streptococci, and staphylococci are the microorganisms most frequently isolated from the blood of patients with puerperal sepsis. (E) Urinary tract and biliary tract infections the colon bacillus, staphylococcus, and streptococcus are the usual infectious agents. (F) Throat infections occasionally a hemolytic streptococcal throat infection gives rise to severe or even fatal sepsis. (G) Cryptogenic sepsis in these

cases bacteremia may occur without any detectable primary focus or portal of entry. At the outset the condition is often mistaken for rheumatic fever. Staphylococci, hemolytic streptococci, occasionally pneumococci, and, rarely, various other microorganisms may be the incitants. (H) Bacterial endocarditis this is a special form of sepsis in which bacteria are swept into the blood stream from infected thrombi on the heart valves. The microorganisms most commonly isolated from blood cultures are *Streptococcus viridans*, hemolytic streptococci, pneumococci, and staphylococci.

Clinical and experimental studies seem to justify the following statements in regard to bacteremia. (1) Except in the terminal phases there is little or no multiplication of bacteria in the blood stream. (2) The symptoms most suggestive of blood-stream invasion are chills, sweats, quick rises and abrupt falls of temperature, hemorrhagic or pustular skin lesions, and progressive anemia. (3) Since bacteremia is frequently intermittent, repeated blood cultures may be necessary to establish the diagnosis. Special media or special conditions of incubation, such as anaerobiosis or an atmosphere containing 10 per cent of carbon dioxide, may be required for the growth of certain species of bacteria. (4) From the point of view of therapy, the advent of the sulfonamides makes the early recognition of bacteremia of even greater importance than heretofore.

In addition to blood cultures and cultures of primary foci of infection, blood counts to determine the presence or absence of leukocytosis and anemia, and cultures of the urine and of skin lesions may yield data of value.—Issued by The New York State Association of Public Health Laboratories, Leaflet No 16

## NATIONAL DEFENSE AND VENEREAL DISEASE CONTROL

The private practitioner has an important part to play in venereal disease control to aid national defense, says a statement issued by Assistant Surgeon General R. A. Vonderlehr urging physicians to read the monthly publication, *Venereal Disease Information*, published by the United States Public Health Service at 50 cents a year.

"During the World War, venereal disease in the Army caused the loss of almost 7,000,000 days—equal to a full year's absence from duty for 19,000 men," Surgeon General Thomas Parran points out. "Infections among military personnel originate in the civilian communities. Recent experience indicates that the venereal disease rate in a given military command reflects the efficiency of the venereal disease control program in adjacent communities. The same is true for industrial defense concentrations

"Effectively carried out," Dr Parran emphasizes, "the eight-point cooperative program will contribute substantially to the physical fitness of men in the armed and industrial defense forces and should be of far-reaching importance to the future control of venereal disease. But this must be a cooperative program between health officers, military authorities, police agencies, citizens, and private physicians."

*Venereal Disease Information* presents a monthly digest of the important papers on diagnosis, treatment, pathology, laboratory research, and public health from the entire world. In addition, it publishes important special papers and reports by leading scientists. It is designed to keep both the specialist and the general practitioner informed of developments in clinical management and public health control of syphilis, gonorrhea, and the venereal diseases.

# Case Report

## TULAREMIA

WALTER FOX SMITH, M D , and JOHN M RICE, M D , Watertown, New York

**TULAREMIA** has not been reported previously in the northern part of New York State in wild animals. The infecting animal, a wild rabbit, in this case was shot at Point Peninsula, Jefferson County, New York. Point Peninsula is an extremely isolated section lying between Lake Ontario and Chaumont Bay and is almost completely surrounded by water. This case is reported not because of any unusual feature but to call attention to this infection in northern New York State, since unquestionably there will be further cases.

### Case Report

A 27-year-old man dressed a wild rabbit shot October 16, 1939, at Point Peninsula, New York. While cleaning the animal he nicked the skin of both index fingers. His companion who actually shot the rabbit opened it and gave the liver to his dog. He did not notice any abnormality in the liver, nor did he become infected in spite of getting the rabbit's blood on his hands.

Forty-eight hours after cleaning the rabbit, the patient suddenly felt feverish, dizzy, chilly, and nauseated. His temperature was elevated to 102 F. The next day he noticed that both index fingers were tender and swollen at the site of the tiny lacerations. Also he had tender swellings in both axillae. His temperature continued high, averaging about 103 F. He complained of upper abdominal and lower chest pain much of the time. He did not improve at home for seven days and was sent for diagnosis to the Mercy Hospital at Watertown. At time of admission his temperature was 104 F and he was complaining of sore index fingers and upper abdominal and lower chest pain.

The physical examination showed an acutely ill man. There was no cyanosis, jaundice, or dyspnea, nor were any eruptions noted. The eyes showed marked photophobia, the pupils were equal and reacted to light and accommodation, and extraocular movements were normal. The nose and ears were normal, the tongue was coated, and the throat was not inflamed. There was no rigidity of the neck, and the cervical glands and thyroid were not enlarged. There was no deformity of the chest. Respirations were normal, percussion and breath sounds were normal, and there were no rales or friction rub. The heart was not enlarged to percussion, was regular, and had no murmurs, sounds were of good quality, the rate was 96. The abdomen was slightly distended and tender across upper part, there was no muscle spasm, and the liver and spleen were not felt. On each index finger there was a pustule covered with necrotic skin and a seropurulent discharge. In both axillae there were several tender enlarged lymph nodes the size of a chestnut. They were firm but not fluctuant. The reflexes were normal.

Course—On day of admission to hospital a

tentative diagnosis of tularemia was made, and material from lesion on fingers was injected in a rabbit. Admission blood count showed a leukocytosis of 18,400 with 82 per cent neutrophils. Blood culture, Widal test, stool culture, and agglutination for undulant fever were all negative. His temperature continued high, with an occasional drop followed by a chill with fever quickly returning. His general condition seemed to be weaker, and he complained of dyspnea along with the upper abdominal and lower chest pain. In view of reported success with sulfanilamide in treatment of tularemia, he was given this medication. Temperature remained elevated and general condition poor in spite of large doses of the sulfanilamide. He was given 60 grams followed by 15 grams every four hours. This was discontinued three days later as he had shown no improvement and was cyanotic and dyspneic.

On the fifth day after inoculation the rabbit died, and postmortem showed typical findings of tularemia, i.e., hemorrhagic edema at site of inoculation, caseous regional lymph node, and small foci of necrosis throughout the liver and spleen.

Antigen for agglutination tests was obtained from the New York State Department of Health. On the eighth day of illness this was positive in dilution 1:120, on the sixteenth day, 1:320.

On the twelfth day of his illness sulfapyridine was started in following dosage: 4.0 Gm for the first dose, then 2.0 Gm every four hours. His temperature gradually fell during the next thirty-six hours until it was normal, and he felt markedly improved. At this time he began to vomit every dose, and it was discontinued by mouth and given 1.0 Gm every four hours rectally for twenty-four hours. During this day his temperature rose to 104 F. Nausea and vomiting ceased and medication was resumed by mouth 1.0 Gm every four hours. The temperature fell to normal within twelve hours and remained so. Tenderness in axillary nodes and pain in upper part of the abdomen and lower part of the chest disappeared at this time.

Because of the time element, the average duration of fever being between two and three weeks, it is difficult to judge the effect of the sulfapyridine. However, the rapid improvement coincident with the administration of sulfapyridine would suggest further trial.

He was discharged from the hospital on November 16, 1939, at which time temperature had been normal for ten days. The lesions on his fingers were well healed but still had some axillary lymphadenopathy.

### Summary

1. A case of tularemia in a man who dressed an infected wild rabbit shot in Jefferson County, New York, a district in which tularemia has never before been reported.

treatment of arthritis a few years ago, and I have here some statements that I then made from a careful reading of the literature. I should like to read just three or four of them. "I know of few subjects in therapeutics which seem to be in a more unsettled and unsatisfactory state than the treatment of arthritis. It does not seem possible to chart the progress in this field by other than a horizontal line with repeated spikes representing new therapeutic ventures. The rise of the spike represents the 'passive faith' which is so common a reaction to new agents or procedures and the fall of the peak represents 'aggressive skepticism.' In few therapeutic fields do we find such sharp contrasts of views concerning matters which should be matters of fact. One arthritis specialist working with a new compound reports dramatic results and another complete failure."

I have here another statement that was made by an outstanding authority on arthritis. "Drugs can be quickly dismissed, iron for anemia, arsenic and strychnine for their tonic effects, and salicylates to ease pain, and that about covers it." That statement was made in 1933. Where do we stand at the present time on the question? We ought to get some idea about this in the course of the discussion this morning. Perhaps it would be a good plan to catalog what is to be said under three or four questions. First of all, do any of the agents that I have listed or any others affect the cause of arthritis, whether it is a known or unknown cause? Second, do they alter the structural changes in the muscles and joints? Third, do they control symptoms? Finally, do they ever effect a cure?

Dr Russell L. Cecil will begin the discussion.

DR RUSSELL L. CECIL. We usually define rheumatoid arthritis as a chronic disease of the joints characterized in the early stages by pain and swelling of multiple joints and in the later stages by ankylosis and deformity.

This condition which we call rheumatoid arthritis is a real disease. I mean it is recognized as such by pathologists and clinicians. They look upon rheumatoid arthritis as a disease with not only a definite pathology but with also a definite clinical syndrome. There has been a tendency to catalog a good many nondescript forms of joint pain under the heading of rheumatoid arthritis, and this error is made even in arthritis clinics.

No arthropathy should be called rheumatoid arthritis unless it fulfills certain criteria. The important criteria are first of all *swelling* and *pain of several joints*. Personally, I like to see,

sooner or later, one or more fusiform fingers, and these may come early or late in the disease. Sooner or later a patient with rheumatoid arthritis usually develops a fusiform finger or two. Then comes the swelling of the knuckles and wrists. The hand tells the story in most cases. With this swelling of several, often symmetrically distributed, joints, we practically always find an increased sedimentation rate. In cases with minimal swelling there is usually a minimal increase in the sedimentation rate. In about 75 per cent of cases, as pointed out originally here at Cornell by Nicholls and Stainsby, the patient's serum gives a specific agglutination reaction with the hemolytic streptococcus. This test is of value but of not so much practical importance as the sedimentation test because it is not so constant. We do not know what it signifies. It was thought this reaction signified a hemolytic streptococcal infection, but that has not been proved. However, we must still classify this disease as a low-grade chronic infection of unknown etiology.

In approaching the treatment of rheumatoid arthritis, why don't we first throw out a few procedures that modern students of arthritis have pretty well abandoned? For example, I think we can say at once that focal infection is very much on the wane. How we used to struggle and search for foci in the days gone by! I do not mean to say that focal infection should be disregarded altogether, but when I speak of focal infection I am limiting my remarks to its relation to rheumatoid arthritis.

In respect to rheumatoid arthritis the theory of focal infection is generally discredited because students of arthritis have found first, that in a great many patients the disease develops without any association with foci and, second, that those who have had foci of infection removed have obtained only temporary benefit, if any at all. The disease goes on its progressive course, even after tonsils, teeth, and other suspected organs have been removed.

There are certain other fads in treatment which have come and gone, such as bee venom and various forms of foreign protein therapy, sulfur, and many other drugs such as iodides, salicylates, etc. Streptococcus vaccine is still used extensively although it is not so popular now as it was a few years ago. While I have never been a strong advocate of vaccine therapy for the treatment of rheumatoid arthritis, we have used it extensively in our clinic work for many years. I have never felt,

# Therapeutics

## CONFERENCES ON THERAPY

THESE are stenographic reports, slightly edited, of conferences by the members of the Departments of Pharmacology and of Medicine of Cornell University Medical College and the New York Hospital, with collaboration of other departments and institutions. The questions and discussions involve participation by members of the staff of the college and hospital, students, and visitors. The next report will appear in the May 1 issue and will concern "The Sulfonamide Drugs."

### Treatment of Rheumatoid Arthritis

DR HARRY GOLD The conference this morning is on the subject of the treatment of rheumatoid arthritis.

I am not sure that we all have the same understanding of the term rheumatoid arthritis. I have put a list of the various forms of arthritis on the board as a guide and perhaps the speakers will be able to set us right on just what one or ones of these forms of arthritis we are treating this morning.

#### *Types of Arthritis and Rheumatoid Conditions*

- 1 Atrophic or proliferative arthritis (rheumatoid)
- 2 Hypertrophic or degenerative arthritis (osteoarthritis)
- 3 Myositis or fibrositis and other conditions
- 4 Arthritis in childhood
- 5 Gonorrheal
- 6 Acute rheumatic fever
- 7 Traumatic arthritis
- 8 Tuberculous arthritis
- 9 Suppurative arthritis
- 10 Typhoid arthritis
- 11 Pneumococcic arthritis
- 12 Charcot's joint
- 13 Back pain
- 14 Sciatica and lumbago
- 15 Intermittent hydroarthrosis
- 16 Gout

I have also a list of the more common agents that have been recommended by various writers at various times for the treatment of arthritis.

#### *Treatment of Arthritis*

- I General
  - 1 Rest
  - 2 Foci infection
  - 3 Diet
- II Physical therapy
- III Orthopedic procedures
- IV Vaccines and nonspecific proteins
- V Drugs
  - 1 Arsenic
  - 2 Iodine

- 3 Salicylates
- 4 Cinchophen
- 5 Aminopyrine
- 6 Quinine
- 7 Digitals
- 8 Strychnine
- 9 Cod-liver oil
- 10 Vitamin D
- 11 Liver extract  
(Vitamin B complex)
- 12 Vitamin C
- 13 Nitrites
14. Ortho-iodoxybenzoic acid
- 15 Bee venom
- 16 Colloidal sulfur
- 17 Sulfanilamide
- 18 Colchicine
- 19 Acetyl-B-methylcholine
- 20 Endocrine materials  
(Pregnancy)
- 21 Radium
- 22 X-ray treatment
- 23 Laxatives
24. Mineral waters
- 25 Local injections
- 26 Therapeutic jaundice
- 27 Dehydration
- 28 Intravenous alterative therapy (salicylates, iodides, colloidal sulfur)
- 29 Autochemotherapy
- 30 Gold salts

There are thirty agents as you see. That list I am sure is not complete. I have also listed the other general measures that one encounters in any complete treatise on the therapy of arthritis, although I do not think we are going to do very much today with these forms of treatment but will confine ourselves more particularly to the question as to what one can do with drugs in the treatment of arthritis.

There are several very satisfactory reviews of the therapy of arthritis. There is one by Pemberton in 1930, another good review by Miller in 1935, and by Hench and his collaborators in 1936 and 1938.

I summarized the prevailing views on the

Arthritic patients can go on taking aspirin day after day without any apparent injury

Iodine and arsenic have been used for a good many years in the treatment of arthritis, but we do not make much use of either in the modern treatment of this disease. The iodides are used more in hypertrophic arthritis but rarely in the rheumatoid type.

I want to say a few words about gold therapy. One could take up the whole hour with this subject because it is new and important and is being much discussed. It is not so new as a matter of fact, because Forestier first began working with gold in 1929 and made his first report in 1931. He got his idea, strangely enough, from a theory that he and other Frenchmen had that rheumatoid arthritis was a form of tuberculosis of the joint, and, as gold had been used in the treatment of tuberculosis, Forestier conceived the idea of trying it in arthritis. At first he worked with sodium-gold-thiosulfate, later with sodium-gold-thiomalate. After his favorable report appeared, gold was taken up by other French and English investigators, and since then a number of studies have appeared in the literature. Thus far there has been little experimental study of the subject, such as the mode of action, gold content of the blood, and mode of excretion. These problems are now being attacked in this country. It appears likely that gold acts as a bacteriostatic agent. There was a theory, at one time rather popular and advocated by Kling and others, that gold salts act by stimulating the reticulo-endothelium. This was a rather fanciful idea, but certain investigators felt that there was some evidence to support it. At any rate, the general belief now in this country is that gold salts act by inhibiting the growth of the agent—whatever it is—that causes the disease. You might ask: How did they arrive at this conclusion? They reasoned by analogy. Such studies as those of Drs. Angevine, Rothbard, and others on animals infected with streptococci, pleuropneumonia-like organisms and other bacteria show that gold salts exert an inhibitory effect on the growth of the bacteria, both *in vitro* and *in vivo*.

Quite a number of gold salts have been used. One of the most popular is sodium-gold-thiosulfate, which has been employed extensively in this country. Another popular gold salt and one that we have used a great deal in the Cornell clinic is sodium-gold-thiomalate (myochrysan). Another is aurothioglucose, usually referred to as solganal, B. All of the efficacious gold salts contain a sulphydryl radical. The

ordinary gold salts, such as gold chloride or even colloidal gold, are not beneficial in arthritis.

Gold salts are given either intravenously or intramuscularly. The oral method of administration does not seem to be effective. The dosage differs in different clinics. We usually begin with 10, 15, or 20 mg and work up gradually to 100 mg. These doses are repeated once a week intravenously or intramuscularly (depending on the salt) until the patient has taken a total of 1 to 1.5 Gm. Most authorities are opposed to larger doses. The patient then gets a rest for six or eight weeks, some advocate an interval of even twelve weeks before a second series is started. Forestier says every patient should have at least two courses of gold, but, if the patient is not relieved by two courses, then gold is probably not going to help.

The most serious disadvantage of gold therapy is the prevalence of toxic reactions which sometimes are quite serious, but I think these reactions can in large measure be controlled by close attention to dosage and careful supervision of the patient. We have now treated more than 200 cases with gold without a single fatal reaction. We have seen 3 cases of rather severe exfoliative dermatitis and numerous instances of simple or squamous dermatitis. A number of patients have had ulcerative stomatitis, which is another common form of intoxication. We have encountered 2 cases of toxic jaundice. We have not had any cases of purpura hemorrhagica. They are being reported, however, and some of these have proved fatal. There have been a few deaths reported due to agranulocytosis.

I suppose that if we keep on using gold therapy long enough in our clinic we will eventually encounter a serious accident of some kind or another, just as happens occasionally with the administration of salvarsan, sulfapyridine, sulfanilamide, and other similar agents. I saw a death last spring in a rather mild case of pneumonia from purpura hemorrhagica following the use of about 40 Gm. of sulfapyridine. Time will not permit us to go into the matter of the toxic reactions in great detail. Sometimes immediate vasomotor reactions occur, such as dizziness, syncope, nausea, and vomiting. Most important is to watch the blood. We do blood counts on our patients once a month. Some clinics advise blood counts once a week. We inquire carefully about any tendency to hemorrhage. We watch the leukocytes and red cells, and we watch for signs of purpura.

however, that vaccine was the final answer to the treatment of rheumatoid arthritis.

We prefer to treat this chronic disease of unknown etiology along certain well-established principles, and I should say there are four of them.

The first is *rest*—not only of the body but of the mind and the emotions. Complete rest and relaxation and the elimination of all sources of anxiety and worry are essential. Many cases seem to come on after psychic shock or trauma. Rest of the affected joints is necessary. If the joint is particularly painful, it is often relieved by the application of splints for twenty-four hours or by the use of a sling or a crutch.

The second principle in the treatment of rheumatoid arthritis is *heat* in all its forms. I tell my patients that heat is their best friend and cold their worst enemy. Warm clothes, hot applications, the infrared light, and the paraffin bath are all helpful. The rays of the sun or the alpine light are used, of course, more for tonic purposes.

Hydrotherapy is beneficial for all arthritic patients, particularly when they begin to improve, not only for its stimulating effect on the appetite and circulation but for strengthening atrophied muscles. Hydrotherapy is an important form of treatment.

Warm climate is still popular but is disappointing in many cases because there is usually a relapse after the patient returns home.

Infrared light is a convenient form of heat therapy. Diathermy is not recommended in the treatment of rheumatoid arthritis as it often increases the pain. We use it in other forms of rheumatism.

The nature of the effect of heat is problematic. We assume, however, that heat acts by increasing the circulation in the joints, by having a general relaxing effect on muscular spasm, and by stimulating the mobilization of antibodies to the affected joints.

Fever therapy has a limited application in this form of arthritis. We use fever therapy chiefly in "active" cases. Fever therapy seems to be particularly helpful in patients with fever and hot, puffy, painful joints. In low-grade, chronic joints fever therapy does not seem to be of much benefit. It often gives these patients only temporary relief. In fact, that is the story of much of the therapy in rheumatoid arthritis.

The third principle in the treatment of rheumatoid arthritis is *rehabilitation*, and that, of course, covers many factors. It includes

iron therapy and transfusions for the secondary anemia which is almost constantly present in these patients. The diet, generally speaking, should not be a low-caloric diet as was once advocated. A well-balanced, high-caloric diet will tend to bring the patient's weight back to normal. A low-caloric diet should be used only if the patient happens to be overweight, but the diet should be one that appeals to the patient's appetite and maintains the vitamins and salts at a proper level.

Under rehabilitation we can also place corrective exercises which are important in the physical therapy approach to the disease. These are often given while the patient is in the warm pool or warm bath, or they may be given in connection with massage at the patient's home.

Exercise is extremely important not only to preserve joint movement but to prevent deformities. Exercises help to correct the tendency to flexion deformity which is such a characteristic feature of this disease. They make the patient feel better, improve the appetite, and help to build up the muscles which have a marked tendency to atrophy.

Massage is helpful during the convalescent stage, not so much so when the patient is in the active phase of the disease. Massage is limited to the muscles and is not used on the affected joints.

We should not fail to include as a part of rehabilitation the various orthopedic procedures that start with the correction or prevention of deformities. For example, in the case of flexion deformities we often use traction and corrective exercises, or splints may be applied during the sleeping hours and for part of the day. Finally, under *orthopedic measures* comes the use of corsets and braces for painful backs. Sometimes the surgeon operates on arthritic joints to correct deformities. The most popular operation is a synovectomy, which is indicated for a chronic villous arthritis—that is, a joint in which there is a marked hypertrophy of the synovial membrane. I have 2 patients now who have recently been synovectomized, and both are well pleased with the results. The orthopedic surgeons select these cases carefully and are not disposed to perform a synovectomy except on a boggy knee or elbow.

Now coming to *drug therapy*, we deal first with drugs that relieve pain. Under this heading we put salicylates first, and acetyl salicylate is the old standby. Most rheumatoid patients take a daily quota of it, anywhere from 40 to 60 grains or even more a day.

general and local rest, salicylates, and physical therapy. These are the four items that I include in the therapy of this disease, although I know that this is considered therapeutic nihilism by many.

There is too great a tendency to send this type of patient for a diagnosis to somebody with special interest in the disease. Without a great deal of study one can learn to make most of the diagnoses rather easily. If there is to be any rationale to any form of therapy, it will largely depend on an accurate diagnosis. In addition to a broad general knowledge one should also be equipped with some knowledge of physical therapy and general orthopedic methods so that the possibilities and limitations of both may be better evaluated. Some knowledge of the pathology of joint diseases and the ability to interpret bone x-rays are important. I do not think that this is too much to require of anyone practicing general medicine, especially if one is going to evaluate therapy. This applies to gold or any other form of therapy.

One authority has stated that about 60 to 75 per cent of these patients will do very well if one leaves them alone. However, as soon as anyone attempts to demonstrate that some particular form of therapy is of value these figures are promptly forgotten.

Great quantities of therapeutic advertisements for arthritis come to my desk every year. They include about everything possible. The fact that so much is spent on advertising to the medical profession indicates that some of the profession accept them. It is rather disgraceful.

This chart is of considerable interest (see Fig 1). It was taken from an article by Davis which appeared recently in the *Journal of the American Medical Association*. Any new form of therapy goes through the following stages. One of investigation, then increased interest, overenthusiasm, publicity, commercial exploitation, etc. Later we come to the stage of poor results, then there is a period of overcorrection and a return to one of more or less stability. With gold we are probably now in the overenthusiastic stage.

I should like to ask Dr Cecil to state frankly whether he thinks it safe for a young doctor just going into practice to take the risk of producing a severe dermatitis, hepatitis, or other serious reaction in his first patient in the community?

Our knowledge of the etiology of the disease has not been advanced by the use of gold salts. It has been inferred that because gold has a

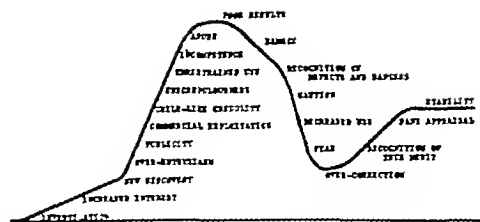


FIG 1 Trial and appraisal, the reaction of the medical profession toward anything new

bacteriostatic action on the hemolytic streptococcus and a favorable effect upon rheumatoid arthritis the hemolytic streptococcus is, therefore, concerned with the disease. This is loose reasoning because we must remember that gold has the same bacteriostatic effect upon many organisms. Other drugs, such as sulfanilamide, which are also effective against the hemolytic streptococcus, have no favorable influence on rheumatoid arthritis.

DR GOLD: The meeting is now open for general discussion. Are there any questions?

DR CECIL: May I answer Dr Angevine's questions?

DR GOLD: Yes, please do.

DR CECIL: I certainly want to take strong issue with one statement that Dr Angevine quoted. I do not think he vouched for it himself, but his statement was that 60 to 75 per cent of rheumatoid patients do pretty well if you just leave them alone. I have watched some of these patients now for a period of many years. Forestier, the elder, who practiced at Aix-les-Bains for many years, said that he had never seen a rheumatoid patient get entirely well and stay well. These patients have ups and downs. It is perfectly true that they get better and are free of symptoms for a while, but sooner or later the relapse occurs. A patient whom I had not seen for four years walked into my office the other day. A diagnosis of rheumatoid arthritis had been made and he appeared to have been cured, but he came back after an interval of four years with a sharp exacerbation of arthritis.

What we need in this disease is a careful and thoroughgoing follow-up study such as has been made in diabetes, tuberculosis, and other chronic diseases. I am quite sure from my own observations that a small percentage of these patients make a complete and permanent recovery. Is that your feeling, Dr Conner?

DR LEWIS A. CONNER: I feel exactly the way you do in that respect. They have their recessions and periods of temporary relief.

We occasionally do a platelet count to see whether or not there is any fall in the platelets. The urine must be examined once a month for kidney complications, although these are quite rare.

Rheumatoid arthritis is a disease from which one rarely gets well spontaneously. It is a disease that is usually progressive. Forester estimates that only 1 to 5 per cent of patients make a complete and permanent recovery. Remissions may last for five or ten years before the almost inevitable recurrence makes its appearance. Therefore, when we get hold of an agent like gold and see remissions in about one-third of our cases, we naturally get a little excited about it. We have never had a remedy that has given us such a high percentage of remissions with complete disappearance of swelling and pain in those cases that are not too far advanced. Even in individuals who have had the disease for several years, the pain and swelling diminish and the patient is often able to go back to work though he cannot be called completely cured. As a matter of fact, we do not use the word "cure" in this connection, in spite of the good results that we obtain with gold (one-third of the cases showing remissions and another third showing marked improvement). About one-third or more of our cases have had relapses. These patients have had complete remissions or marked improvement, but when we stopped the gold for a while to let them excrete a little of the metal and thereby prevent gold intoxication there has been a return of joint symptoms, usually within a few weeks or months after the last injection of gold. In other cases the relapse has occurred only after an interval of several years. Fortunately, the relapse is not so severe as the original attack, and the relapse also responds to gold treatment, though not always promptly.

On the whole, the outlook for gold therapy is quite promising. Students of arthritis, after being in a wilderness of pseudotherapeutic remedies for many years, are now beginning to approach a sort of "promised land", at least the patients think so, for nearly all of them say they feel better after gold treatment than after any of the other forms of treatment which had been used previously.

Where should the arthritis patient be treated? There are three clinical types. One is the acute or subacute type with pain and swelling and some fever, suggestive of rheumatic fever. This type of arthritis should be treated in the hospital. Then there is the mild, sluggish type which we treat in the

clinic or in the doctor's office. The third type is the advanced cripple who really needs sanitarium care. This patient can be made fairly comfortable either by sanitarium care or by special nursing in the home or hospital.

When we bring the rheumatoid patient into the hospital for treatment, we generally give him intensive physical therapy, perhaps some fever therapy, and several blood transfusions. He gets a nutritious diet and plenty of rest, which many of them need very badly. We put the patient to bed and he stays in bed a part of every day. On this regimen he soon begins to show real improvement, and then after six weeks, which is about the maximum hospital treatment feasible, he is discharged feeling much encouraged and more comfortable. Treatment is then continued either at home or in the physician's office.

DR GOLD: Dr Angevine, will you continue the discussion?

DR D MURRAY ANGEVINE: The fact that Dr Cattell has asked a pathologist to discuss this subject indicates that it is in not too healthy a state and, if it does not require an autopsy, at least a liberal biopsy is necessary. From Dr Gold's introductory remarks it appears as though he were putting Dr Cecil and myself on the spot. However, I do not think he actually intended to do so.

Dr Cecil has covered most of the important subjects, but I should like to mention a few things that are of importance in the treatment of this disease. I would first like to say something on behalf of the patient. The first patient who will come to you in practice will probably be without teeth and tonsils due to the energetic tactics of your medical confreres. The patient will have little use for doctors, so you see that you have a problem on your hands, and it is of the utmost importance that you immediately gain the confidence of this patient in order to keep him under your care long enough for adequate treatment.

In treating these patients either in the clinic or in the office the most important thing is to have sufficient time to listen to their problems and complaints. There is too great a tendency on the part of physicians to give them a pat on the back, an injection by a nurse, and to send them on their way. From experience in the clinic I have found that if you can devote sufficient time to these patients, as you do to others, they will be most appreciative and remain under your care over a period of many years.

They will do well under the type of therapy which Dr Cecil has mentioned—namely,

of their symptoms quite sharply after removal of foci. You always have to run that risk in taking out tonsils and teeth. The presence of hemolytic streptococci in tonsils would not excite me much. The tonsils are scavengers. They are just the places where streptococci ought to be. If you were to cut a tonsil open and get streptococci from the cut surface, that would be just what I should expect. If you got actual pus, that would be quite a different matter, of course.

DR. JANET TRAVELL. I should like to ask two questions. One is in connection with the sulfur content of these preparations. Dr. Cecil pointed out, I believe, that all of the commonly used gold salts contain a certain proportion of sulfur.

DR. CECIL. Yes, but not very high.

DR. TRAVELL. The sodium-gold-thiosulfate accepted by the A.M.A. Council on Pharmacy and Chemistry has been analyzed and contains about 25 per cent of sulfur and about 37 per cent of gold. Further, there is an experimental study in the literature by Japanese investigators on experimental tuberculosis of guinea pigs, and they found that treatment was just as effective if they used the salt after the gold radical had been removed but the sulfur radical had been retained. I wonder if there are any salts of gold in use in our clinic which do not contain sulfur?

DR. CECIL. Gold salts, to be effective, must contain a sulfhydryl group. This is known as Feldt's principle. Feldt's work was done several years ago, and he postulated that gold salts to be efficacious in animal experiments had to contain a sulfur radical. On the other hand, Freyberg's work at the University of Michigan proves pretty clearly that sulfur alone has no value in the treatment of arthritis.

DR. TRAVELL. The sulfur studies were not conclusive. It might be that a combination of gold and sulfur is needed.

DR. CECIL. Yes, there might be something to the combination.

DR. TRAVELL. I have another question in regard to sedimentation rates. Elman and Lawrence recently expressed enthusiasm regarding the use of the sedimentation rate as a guide to the effectiveness of therapy and also as a guide to the dosage. They report that they have greatly reduced the incidence of toxic effects by discontinuing therapy when the sedimentation rate returns to normal. I wonder if you would say something about that.

DR. CECIL. I should have spoken about the

sedimentation rate in more detail. The sedimentation rate is a great help to us in the use of gold therapy. It has been shown by numerous observers that when gold therapy is effective the sedimentation rate tends to return to normal. Occasionally we find cases that are greatly benefited by gold though the sedimentation rate remains high. On the other hand, even those who get a normal sedimentation rate sometimes relapse, and the sedimentation rate then rises again.

DR. TRAVELL. After you stop the gold?

DR. CECIL. Yes, in some patients a few weeks after you stop the gold the sedimentation rate will begin to climb either before joint symptoms have developed or simultaneously with the reappearance of arthritis.

We recommend that patients free from symptoms have a sedimentation test about every three or four months to determine whether or not the rate is remaining normal. As long as it is normal we feel that the patient is pretty safe. If a patient has had a remission after only one course of gold, I would give another course of gold even in the face of a normal sedimentation rate.

DR. TRAVELL. Then it is a valuable guide?

DR. CECIL. Yes, it is. It is a simple test, too, and easy to do.

DR. ANGEVINE. One of the reasons I am so skeptical of gold salts is that I have seen the kidneys and livers of many animals treated experimentally. Our early experiments showed that gold controlled the infection very well, but as the virulence of the organism increased gold became less effective. It was necessary to increase the amount of gold to control the infection. However, we soon produced some striking lesions in the kidney and liver. Perhaps, looking at it from this angle, one becomes more conservative than one who does not have the opportunity to observe the toxic effects directly.

DR. CECIL. The treatment of any disease of unknown etiology is always more or less irrational. I think if Dr. Angevine had arthritis he would take a little gold himself.

DR. CONNER. Dr. Cecil, have you not seen improvement follow the various other methods of treatment which have had a temporary popularity in the past?

DR. CECIL. Yes!

DR. CONNER. In the fever treatment or the treatment with vaccine?

DR. CECIL. Yes, but not nearly so frequently as with gold. The development of gold therapy in the United States is rather interesting. I do not know whether you are

Hence, often it is difficult to rule out the matter of coincidence in appraising the value of these various methods of treatment

DR McKEEN CARTELL Recent studies by Sidel and Abrams emphasize the difficulty in evaluating the results of therapy in arthritis. These investigators compared the results of intravenous polyvalent streptococcus vaccine with a series of controls in which saline solution alone was injected. Of 58 patients with chronic rheumatoid arthritis 33 were treated with saline injection, and 74 per cent of these showed definite improvement, a percentage slightly higher than was obtained in the remaining 25 patients receiving the vaccine. They concluded that the psychologic effect of the injection rather than the substance injected was the important thing. Evidently we must keep in mind the influence of the needle in evaluating therapy.

DR CECIL So far as my enthusiasm for gold therapy is concerned, I do feel that gold is giving us more in the way of successful therapy than anything we have worked with so far, and that is the present feeling in England and in other European countries. Whether it is the final answer or not I would not dare to say. We may get improvements in preparations of gold salts so that they will be less toxic and safer to use. When we finally determine the etiology of this disease, better agents than gold may be discovered, but at the present time I do feel that gold is the best thing available in the way of medical treatment. Would I take gold myself if I had rheumatoid arthritis? My answer would be yes, and I would feel that if I took it early in the first few months of the disease I would have a good chance of making a recovery, with one or more relapses possibly later on, but with eventual recovery.

Young physicians could use this drug if they were careful, but they certainly should have a frank talk with the patient and with his family and explain to them that gold is a dangerous agent and may occasionally cause severe reactions even under the most favorable conditions. I do not see any reason why a young doctor under such circumstances should not use the drug.

DR HENRY B. RICHARDSON Dr Cecil, how sick would a person have to be before you would want to risk the gold treatment? Whenever the diagnosis is made, or would you be guided by the symptoms?

DR CECIL I had a letter from Dr Forestier about a year ago in which he seemed quite impatient with the tendency of American

physicians to use gold only on late cases in which everything else had failed. He did not think that was fair to the remedy. He claimed that gold should be used *early* in the disease before permanent damage has been done to the bone and cartilage. This reasoning seemed to be fair enough. The earlier you use gold, the better.

DR EPHRAIM SHORR A number of years ago the prevailing ideas with respect to foci of infection were that if the focus was definite and could be removed early in the disease the beneficial effects were much more striking but that with time the influence of the removal diminished greatly. I bring up this point to ask whether that is your opinion and consequently whether the tendency to under-emphasize infection today is not to some extent dangerous and unfair to the patient?

DR CECIL I think a patient with rheumatoid arthritis should have any obvious focus of infection removed. If the tonsils are badly diseased, if the sinuses are giving trouble, or if the teeth show some definite abscesses, these infected areas should be taken care of. There was a time when every rheumatoid had his tonsils and teeth removed, almost as a routine. As a result he often parted with innocent tonsils and many perfectly sound teeth which he might just as well have kept. Even when obvious foci of infection are discovered, I would not expect their removal to have any permanent influence on the course of the arthritis. However, my own feeling is that there is such a thing as "focal infection" arthritis as distinguished from the rheumatoid type. I remember a doctor who used to come to my office who had a chronic prostatitis and several swollen painful joints. Whenever his prostate was massaged, he would suffer a prompt exacerbation of swelling in his joints. He did not have what I would call rheumatoid arthritis, but he had rather a peculiar hot, inflamed type of joint which would come and go and which never progressed into a typical rheumatoid picture.

DR SHORR I wonder also whether inspection of the tonsils is sufficient. I recall tonsils that were removed and cultured by Dr Stansby, which grossly looked entirely normal, yet not infrequently there would be collections of pus with almost pure cultures of streptococcus. Do you think that the risk attending tonsillectomy in a patient who is quite ill with arthritis is so great that it outweighs the possible beneficial effects?

DR CECIL About 1 or 2 per cent of the patients in our series have had exacerbation

value Iron does not control their anemia as would be expected because of the fact that their anemia is not as a rule due to iron deficiency. The value of the removal of tonsils and teeth as foci of infection is open to serious doubt. Patients seem to be no better off after these procedures have been carried out. Vaccines have also made out a bad case for themselves. They seem to be no better than water given under similar circumstances.

The use of gold salts came in for some attention. Weekly intramuscular or intravenous doses of 10 to 100 mg in courses of 1 to 15 Gm have been reported to bring about remissions, more frequent, more complete,

and more protracted than occur without this treatment. Dr Cecil believes that gold salts have solid merit. The frequency of dangerous reactions was stressed. A more skeptical view of their value was taken by other students of arthritis at this conference. The question was raised whether the use of gold salts, which had its origin in a double error—namely, in the notion that rheumatoid arthritis is a form of tuberculosis and that gold is of value in tuberculosis—may not represent merely another temporary episode in the history of the long list of therapeutic promises for rheumatoid arthritis which have failed to materialize.

### TREATMENT OF WAR BURNS

At the Royal Society of Medicine, Surgeon Rear Admiral Wakeley opened a discussion on the treatment of war burns, as reported in a London letter to the *J.A.M.A.* At the outbreak of war it was thought that the treatment would be simple, and the use of tannic acid was regarded as completely satisfactory. But this proved far from true in the navy, where many casualties from burns occurred.

War burns differed from those of civilian life in that they might not be treated for many hours or even days. On a warship only first-aid treatment could be given in the majority of cases. Most of the burns involved the face and hands and were due to gun flash, bomb flash, incendiary bombs, or gasoline. First-aid treatment consisted in morphine, warmth, and fluid to counteract shock. If this was marked, plasma transfusion was given. Secondary shock occurred some hours after the burn and accounted for 80 per cent of the deaths.

The most important factor in it was the loss of plasma from the burned surface. The blood might be so concentrated that the hemoglobin rose to 140 per cent. The best treatment was to replace the plasma protein. Given intravenously, plasma raised the osmotic pressure sufficient to restore the normal distribution of fluid between the vascular and interstitial components. Whole blood transfusion and intravenous physiologic solution of sodium chloride or sterile water were contraindicated. The amount of plasma necessary must be estimated by frequent blood examinations.

Wakeley agreed with Aldrich that acute toxemia from burns was due to streptococcal infection. It did not appear for several days and

could be prevented by primary cleansing before coagulation. It was not nearly so common as in the last great war, for which no doubt coagulation was responsible.

For extensive burns with toxemia, saline baths had proved valuable. In first- or second-degree burns, sepsis could be prevented if coagulation treatment was given at once and adequate cleansing and coagulation followed on arrival at a hospital.

With regard to local treatment, he favored gentian violet jelly with merthiolate (1:5,000), which could be applied to the burned areas without any cleansing. The application should be liberal, for it was painless and even soothing. It would seal off the burned area and form a crust which remained until arrival at a hospital. Local treatment should not be given in the presence of shock. Tannic acid should not be used on the hands and face.

In the hospital the treatment of shock was instituted, and plasma banks and dried plasma were playing an important part. Oxygen administration was helpful. After shock had been treated the patient was taken to a warm room and anesthetized with gas and oxygen.

The burned area was thoroughly cleansed with saline solution, dried with an electric hair dryer and two applications of an aqueous solution of triple dye (2 per cent gentian violet, 1 per cent brilliant green, and 0.1 per cent acriflavine) sprayed on the surface. This produced a thin, supple, adherent tan, which loosened about the eighth day and gradually fell off, leaving a healed area. If the burn was extensive and of third degree, the area should be excised and skin grafted.

### HOPE IT WAS A SOFT HAT

Mike had just been operated on and was placed in a ward between two other boys from the Emerald Isle. After he had come out of the ether and was still sort of woozy, the Irishman on one side yelled over to the third one saying, "Pat, how was your operation?" Pat replied, "Sure, they forgot to remove the sponge from me and they had to reoperate and take out the

sponge. And how is yours, Jim?" To which Jim replied, "They forgot the scissors in me. They had to reoperate and take out the scissors."

About that time Mike's doctor stuck his head in the door and hollered, "Anybody see my hat?" and Mike fainted.

—Davis Nursing Survey

familiar with it or not. It dates back to Forestier's visit to the United States in the early thirties. He lectured on gold therapy in various clinics of this country, and all who were interested in arthritis undertook to treat some patients with gold. Nearly every one of us ran into trouble. I encountered an exfoliative dermatitis with the third case I treated, and others had similar experiences. We became frightened and abandoned the use of gold entirely. However, favorable reports on gold therapy kept coming out in French and English journals. Finally, some of these English physicians—arthrologists, if you want to call them that, or rheumatologists—working in the arthritis clinics in England came over here and took us to task, and the *Lancet* had an editorial in which American medicine was chided for not making use of such a valuable agent. About three years ago after being thus chastised by our English friends, some of us here in America turned to gold therapy again and we are now giving it a really fair test. We are beginning to see that there is something in what the French and English have claimed for it.

DR TRAVELL. Dr Cecil, isn't it true that when gold was first introduced the doses that we used were much larger and the incidence of toxic effects much greater?

DR CECIL. Yes, most of the severe reactions and fatalities have been in patients who were receiving 200 mg doses and total doses of 2 or 3 Gm.

DR TRAVELL. We are perhaps over-emphasizing the dangers of this substance when it is used conservatively.

DR CECIL. The trouble is that there is a very small margin between the toxic and the therapeutic dose. In fact, some think the patient gets the most striking benefit when he shows some toxic effect such as a skin rash, a sore mouth, or something of that sort. That has been my experience. Others do not want to admit this. A colleague of mine recently remarked that in five years we would probably have gold salts that could be taken freely without any danger at all. Do you not think that is likely, Dr DuBois?

DR EUGENE F. DuBois. I think there will always be danger.

DR RICHARDSON. Are the toxic effects in proportion to the dose?

DR CECIL. They are, except in about 10 per cent of the patients who are quite sensitive. These may have toxic manifestations even after the first, second, or third small dose.

DR C. H. WHEELER. We had a patient in

the hospital, Dr Cecil, who developed a severe exfoliative dermatitis from the gold but who experienced so much relief from the arthritis that he would willingly spend several weeks in the hospital with dermatitis again, if it were necessary, in order to secure such benefit.

DR GOLD. From the thirty odd therapeutic measures we end up with about three—arspin, iron, and gold.

DR CECIL. That is about right.

DR GOLD. What happened to arsenic and strychnine?

DR CECIL. I think they were remedies that were used at one time for almost everything.

DR PAUL REZNIKOFF. Do you think iron is effective in arthritis?

DR GOLD. Do you want to take out iron also?

DR CECIL. I think Dr Reznikoff is making a good point. It is extremely difficult to build up the blood with iron when the arthritis patient has a really severe anemia. Some will respond, but if the count drops to as low as 3,500,000 erythrocytes there is usually difficulty.

DR REZNIKOFF. Even if they have mild anemia, I question whether iron is effective because there is no iron deficiency.

DR GOLD. We may now summarize briefly the chief points that emerge from the discussion. The treatment of rheumatoid arthritis has been considered. This disease is distinguished from other rheumatic states by the following specific pathologic changes, swelling and pain of several joints, the fusiform finger, and increased sedimentation time of the red blood cells. Its course is chronic, it shows frequent and protracted remissions and is rarely completely cured. Its cause is unknown, but it is still regarded as a form of chronic infection. The mild forms may be managed as ambulant patients, the acute and severe forms require the hospital, and the advanced cripple needs sanatorial care.

Only a few of the numerous agents and methods of treatment were considered. Physical and mental rest, a well-balanced diet, and abundant vitamins are important in order to secure the best results. The application of heat in various forms is helpful. Physical therapy, fever therapy and blood transfusions, corrective exercises, and various orthopedic procedures play a useful part in appropriate cases.

Acetylsalicylic acid appears to be the favorite for the control of the pain. Iodides, arsenio, and strychnine are of questionable

to be supported by tax monies. Before they make any such decision they will wish to learn the facts from the experience of other people and governments whose schemes with the same basic idea have been put into effect for groups limited by earning capacity, and in these instances for a part but not for all of the medical services which are thought of here as logically to be included within a system of socialized medicine.

### Sickness Insurance and "Health Insurance"

It is under sickness insurance schemes that some other nations have put into effect for some of the people medical services limited in one way or other—the members of the insured group paying some part of the cost.

These systems are commonly referred to in this country as "health insurance," and in fact this term has been used since about 1911 in England to describe what is neither insurance nor a health service. The cost of so-called "health insurance" is met only in part by the people "insured." The taxpayer who is not eligible for benefits and the employer who receives no service are both required to contribute to the cost of maintenance of medical and other services applicable to but a fraction of the population. This is not insurance but state and contributory philanthropy. While treatment of sickness at home and office by the physician supported by the sickness insurance system may result in the restoration of the patient to health, health services as we think of them in this country, prevention of disease and supervision of personal and collective health, do not enter these misnamed "health insurance" schemes at all. Sickness insurance as it is practiced in several compulsory government schemes in Europe cannot be honestly described under the term of "health insurance." Health is not insurable on any financial, social, or medical basis, although services intended to secure a better measure of health can be prepaid by contributory schemes as can services for sickness. As a matter of fact, no sickness insurance schemes here or abroad include personal health services, that is the private practice of preventive medicine, within their benefits. Keeping in mind that the principle of insurance, whether on a voluntary or compulsory basis, whether operated under government or private nonprofit or commercial auspices, can be applied to meet the cost of medical care for disease or injury, it must be understood that there is no way in which the insurance

principle can be applied either to guarantee health or to meet the cost of services intended to keep well people well. Not all types of physician's services meet the limitation of an insurable hazard, "that the happening of the event must not be subject to the control of the insured individual."

"Health insurance" is a misnomer, as a slogan it is deceptive. The use of this term leads to muddled thinking and, if applied to the realities of individual or community life, can only develop a sense of frustration and disappointment in those to whom it is offered as a way of making medical care available for all comers. Health can no more be insured as an insurable risk than education, character, or morals.

### Public Health Services

Local and national governments in the nations of western civilization have been so convinced for about a hundred years of the necessity of health protection by the exercise of the police power of the state for public benefit that there is, nowadays, no uncertainty as to the proper functions, methods, costs, and results of public health services.

The application of the sciences of preventive medicine by government for social ends constitutes what is correctly defined as public health work. This is to be clearly distinguished from the private practice of preventive medicine and from the art and science of so-called curative medicine—that kind of medical care which depends upon the individual application of diagnosis and treatment for humane and competent care of the sick patient by the physician of his choice.

Public health work is supported by the taxpayers as they support public services for fire protection, law enforcement, parks, highways, schools, and courts of law.

### Organized Care of the Sick

Care of the sick in hospitals and kindred institutions and, to an increasing degree, through medical and nursing care in the home is supported by the taxpayers with the co-operation of agencies maintained in whole or in part by voluntary contributions. This is what is meant by organized care of the sick.

Socialized medicine as we have defined it is not primarily of interest to the indigent, the very poor, or the wage earner of small means for whom any illness that cuts off his income for a week or so makes him dependent—at least in regard to the cost of his medical care. These indigent and medically indigent frac-

## Special Article

### THE QUESTION OF SOCIALIZED MEDICINE

HAVEN EMERSON, M D , New York City

**W**HETHER or not we shall have socialized medicine will be decided by what we include under the term and upon the practicability of achieving what people hope for from such uses of medical resources without unreasonable cost

#### State Medicine

We have had state medicine in gradually increasing scope, usefulness, and cost since the very origin of our nation, for among the first activities of our federal government in 1789 was the provision of medical care for merchant seamen at various ports. Out of this marine hospital service operated under the Treasury Department has grown the United States Public Health Service—only recently transferred to the jurisdiction of the Federal Security Agency. Not only does the federal government conduct comprehensive activities for the prevention of disease and protection of the people's health by its control over interstate and foreign commerce but it operates many hospitals and similar institutions for veterans and certain classes of federal employees, including those of the Army and the Navy.

Each state and many a city and county government operates institutions and agencies for care of certain large groups of patients with mental, tuberculous, and other communicable diseases, special institutions for the sick among criminal and dependent persons, and the whole range of general and special hospitals, dispensaries, and home services with which we are so familiar under the departments of hospitals, health, and welfare of our cities.

All these activities of government have been accepted as desirable, necessary, and practicable. Furthermore, they have probably been less costly and of more benefit socially than if the services rendered had been conducted under other auspices.

There is no controversy of opinion or uncertainty in the public mind as to the continuance of these public services for care of the sick, except as to details of quantity and quality of such care to be provided at the taxpayer's expense.

#### Socialized Medicine

What is the difference, then, between state medicine as we have long experienced it and the content of socialized medicine as popularly understood? By socialization of medicine I take it that most people mean the conduct of all services of physicians and the associated professions and vocations, whether in institutions or by direct personal relation between individual doctor and patient, through a system of salaried employees of the state. Or they mean that such services are to be provided by some agency created or permitted by the state according to the need of each member of the population, whether for promotion of health, protection against disease, or for diagnosis and treatment of the sick. It is expected that these facilities would be available regardless of the ability of any individual in the community to pay any part or all of their cost at the time he receives them or later.

Nothing remotely resembling such a complete undertaking by government or by voluntary agencies under official auspices has been put into effect anywhere in the world, although it had been approached in some respects in Denmark after a variety of experiments over a period of one hundred years. In the Russia of today, socialized medicine in our chosen sense of the term, while adopted in theory, does not, in fact, function practically. There are areas such as those of the impoverished Highlands and Islands of Scotland where only public medicine in its entirety will work. A few such areas may also be found in North America. It may well be that some political unit, state, city, or county in the United States will be authorized by its voters to embark on such a project. We can only speculate as to the costs and results, since we have no basis for estimating the demands that would be made upon the professional personnel or the extent to which the people of the community would be satisfied with the medical care they received, or with its expense.

There is certainly nothing in our form of government to hinder the voters from demanding and authorizing all the functions of a comprehensive system of socialized medicine.

the facilities of the appropriate medical or surgical specialty for every patient who presents symptoms of disease. The competent physician is expected to avoid unnecessary examinations, operations, or other treatments, which, though conceivably applicable, may not be either necessary or desirable for the patient under consideration. Under sickness insurance schemes, and one may expect also under any system of socialized medicine, there will be no way by which the physician can be compelled, or the patient can be persuaded, to forego the use, whether necessary or not, of any procedure, however costly, which the patient may request. As the physician and the patient are both relieved of any restraint upon the score of direct personal expense of diagnostic or treatment facility, it is to be expected that the cost of medical care will increase considerably under any system of socialized medicine. There is no valid evidence or assumption that the cost will remain at the present level or fall.

### Is There a Solution?

How are we to go forward to settle disputed points, form sound opinions, and make decisions that will satisfy hopes and doubters?

We can perhaps get our answers piecemeal. We can undertake—either for some general but not inclusive type of medical service, or for some significant fraction of a population, or for a limited political unit—the creation of a service in which the people as a whole constitute the employer and the appropriate professional personnel—physicians, dentists, nurses, bacteriologists, pharmacists, and medical institutions—are the employees under conditions satisfactory to both parties and publicly recognized as fair and just.

The quality of medical care, upon which the success or failure of any individual physician, or employed group of them, will always depend will be determined by the professional qualities of those whom the social unit, community or people, employ. It is not conceivable that, while our constitution and form of government endure, physicians or others can be compelled to accept public service against their preference. There is no quicker way to deteriorate a body of professional practitioners than to deny them the right of self-determination of employment. An even superficial acquaintance with the prewar scene in central Europe will convince the shrewdest skeptic that medical services are particularly sensitive to conditions created under compulsory sickness insurance schemes.

There should be no serious difficulty in voluntary recruiting of licensed practitioners of the necessary professions to serve a community that wishes to replace private initiative in medical care by a system of socialized medicine.

The methods of evaluating the results of such a form of medical service are available and can be relied upon for the cruder manifestations of ill health. Since the payments would all be from tax money, exact accountability should be easy to attain.

The overhead expenses should be calculable with some exactness.

### Alternatives to Sickness Insurance or to Socialized Medicine

Time and experience in a number of such enterprises should go far to determine whether the people of the United States want more of them or will turn to the development of higher proficiency by the methods of medical care now in more common use. In the meantime would it not be well to put our minds upon alternative methods, equally consistent with our form of social or governmental order and perhaps more suited to the traditions and peculiar genius of our people and the professions? I refer to three American contributions to the application of and payment for medical care. First in time of development is the voluntary organization of groups of physicians whose collective skills provide for a quality of care impossible for any one physician, however erudite and experienced, to offer. This is essentially the method of the general and special hospital with its medical board and staff. Second in development, but by far the most rapidly growing and financially interesting of the devices of patients and doctors to affect the cost and manner of paying for care in sickness, is the prepayment plan for hospital care. This is sound insurance and a method capable of wide application into other fields of medical care such as visiting nursing or service of physicians. The chief hazards that such prepayment plans for meeting the hospital costs for illness face are the selfishness of patients, individuals who abuse their privileges, and the complacency of physicians who recommend patients for hospital care needlessly. These common expressions of weakness or dishonesty in human character can only, to a limited degree and at considerable added cost, be offset by precautions intended to frustrate such insured persons as seem determined to get their money back or its equivalent in terms of service.

tions of the population will in any event be cared for at public expense when sick. The poor and the temporarily medically indigent escape from humiliating intrusion upon their privacy by the "means" test. They favor socialized medicine not because it gives them better medical care but as a means of escape from the questioning of the social worker, the inspector, the investigator. The well to do, the rich, will always be able to command the services of physicians and medical institutions by paying for what they want or need, regardless of, or in addition to, any sums they may be required to contribute in the form of taxes or insurance to support socialized medicine.

Those concerned with increased amount, improved quality, and decreased cost of medical care which they hope to obtain through socialized medicine will be found among self-supporting persons or families with incomes of \$1,200 a year or over, who believe that by some method of pooling their resources they will attain three objectives—that is, more, better, and less costly medical care. This is an admirable goal to hope and plan for. Certainly, if this can be reached by any proper use of social resources and the authority or consent of government, federal, state, or local, the professions directly concerned with providing care for the sick will be found encouraging and supporting the project.

To the question—"will socialized medicine provide an increased amount of the kind of medical care which the people believe they need?"—one can safely answer, "yes!"

Wherever the barrier of an immediate or cash expense is removed, patients will call upon physicians and medical institutions more frequently, and the occurrence of illness justifying medical attention will appear to double or treble in amount and duration. The amount of illness will not alter, but resort of people to free medical service will be much more frequent. There is no evidence that the people thus more abundantly served are better cared for or have better health.

To the question—"will socialized medicine improve the quality of medical care?"—the answer must remain uncertain until we have a fair and safe yardstick to apply to medical care by which we can test change of quality and until, somewhere, an inclusive service under the principles of socialized medicine is actually put into operation. From experience in some European nations with sickness insurance schemes that most nearly correspond to the principles of socialized medicine we

have learned that the quality of care, as well as the amount available to the lowest insured groups, is generally improved, while the general level of medical attention to the sick by the physician in his office or at the patient's home falls decidedly below the level of what the average self-supporting family obtained from their private physician formerly. However, this failure to improve quality under insurance schemes may, in those countries of Europe where they have been best developed, be due in large part to the fact that the insured clientele receives no specialist or hospital services, both of which would certainly have to be included in any scheme of socialized medicine acceptable in the United States. Improved quality of medical care, under whatever plan of payment or employment of physicians and assistant professions, will always depend upon rising standards of medical education, increased opportunities for postgraduate training and re-education, and such freedom from economic limitations as will encourage the physician to develop initiative and to test new methods of diagnosis and treatment. None of the sickness insurance schemes so far developed have created such conditions of professional employment as contribute directly to a better quality of medical care. It is fair to say that advances in medical care since 1883 in Germany and since 1911 in England, and for similar periods in other countries with sickness insurance services, have not come from physicians engaged in serving the insured fraction of the respective populations.

As to the cost, the amount, and the quality of services expected by members of a comprehensive system of socialized medicine, we can be reasonably sure that it would be far above the cost of the care now provided. There are few individuals who can afford to avail themselves of all the resources that the medical sciences have put at the service of the physician to apply for early, prompt, accurate, and thorough diagnosis, and for the most appropriate and successful treatment of sickness. There is certainly no government that could now finance the cost of medical care at such a level. Even the more generously financed of the voluntary sickness insurance schemes, those which call for a contribution of not less than \$3.00 a month from each beneficiary, cannot supply the amount of medical attention that people think they need and of a quality acceptable to the medical profession in this country.

Fortunately, it is not necessary to use all

(S-1620) should be allowed to become a law as a means of facilitating the establishment by federal subsidies to states of a scheme of socialized medicine within such states as may elect to try out such a plan

Federal subsidies for general medical care as proposed under the half-dozen categories of the Wagner Bill of 1939 (S-1620) are of quite a different order of magnitude and purpose from those, limited in objective and in the amount of money proposed, for hospital construction in backward and impoverished states as expressed in the Wagner Bill, Senate Introductory 1842, of the 1940 session of Congress

### Recommendation

Instead of any compulsory system of socialized medicine, I advise the development of group medicine as carried on by organized hospital and clinic staffs under voluntary aus-

pices, extension of voluntary prepayment plans for hospital and other forms of medical care, voluntary sickness insurance schemes, and encouragement under state laws of voluntary cash indemnity insurance plans to meet the cost of medical care of the individual in sickness and for health protection

With these methods to bring about better medical care and provide thrifty methods to meet its cost, we have a right to expect that public health services will be adequately supported by government. Government alone can operate the necessary public health facilities. Supplementary to these, close cooperation and interdependence of the private practitioner of medicine with the local and state department of health will be so extended that the private practice of preventive medicine will be as thoroughly recognized as are the curative services of physicians to the families of the nation today

### RETURN OF BREAD CAST ON THE WATERS

"In this hazardous period of social, economic, and political instability, which is threatening the accepted foundations of life including the time-honored principles of medical practice, it is well for us to continue voluntary care of the poor," says an editorial published in the *Journal of the Oklahoma State Medical Association*. This can be accomplished either through individual or organized effort. Accumulated experience indicates that individual care is not wholly without material reward.

"Dr Daniel Drake, one of the great in the history of medicine, once said to Dr Lunsford P. Yandall, of Louisville, Kentucky 'I have never seen a great and permanent practice, the foundations of which were not laid in the hearts of the poor. Therefore cultivate the poor. If you need another, though sordid reason, the poor of today are the rich of tomorrow in this country. The poor will be the most grateful of all your patients. Lend a willing ear to all their calls.'

"In Abraham Flexner's autobiography, *I Remember* there is a statement suggesting that Dr Yandall may have passed this advice on to his illustrious sons. Dr Flexner says that when he was a boy one of them treated him for a severe and obscure illness and that 'his remuneration was a weekly loaf of mother's bread, which I regularly used to carry to his home.'

"Early in his career Benjamin Rush said the poor were his best patients because 'God is their paymaster.' At the age of 68, on his deathbed, he said to his son 'Be indulgent to the poor.' Though a century has passed, we find the follow-

ing in the *Life of Chevalier Jackson*. Dr W. W. Keen is quoted as having said, 'Chevalier Jackson's skill was acquired by a lifetime of work with the poor.' No man could wish for a greater reward than Dr Jackson's skill and the realization of what it has meant to humanity.

"Returning to the sordid side, it may be pointed out that in the eighteenth century Fothergill, whose annual income was \$125,000, said 'I climbed into the pockets of the rich over the backs of the poor.'

"The author recalls that one of his professors, a brilliant teacher and busy practitioner, attributed his high professional rating among the well to do on Fourth Street to the influence of his washerwomen and nursemaid patients in poverty row on the water front.

"In his remarkable work on surgery, Henry of Moudeville made the following statement 'If you have operated conscientiously on the rich for a proper fee, and on the poor for charity, you need not play the monk, nor make pilgrimages for your soul.'

"Let us pray for the preservation of personal freedom in the choice of a physician. It is this that keeps every good doctor's door open to the poor. The doctor needs the chastening influence of their presence, and they need the sense of security and independence which a free choice helps to preserve. In time of trouble there is something intensely vital about this intimate relationship. No doubt this is due to the fact that the true physician is genuinely interested in his patient and does what he can to mend broken bodies without regard to religious faith, moral, social, or financial position."

Nature is the great collaborator. As Ambrose Paré used to say "I treated him and God healed him."—*Ill Med J*

Five doctors signed the Declaration of Independence. Can one physician in ten thousand name them?

rendered. The whole system of hospital prepayment plans depends upon pooling the small resources of the many, so that the few (10 per cent) who need hospital care can have it in adequate amount and without unbearable individual costs. If any considerable number of members of such a plan demand hospital care that is superfluous, the rates for all the other members will have to be raised or the benefits be reduced.

The third device to make the costs of sickness less unbearable is that of voluntary cash indemnity insurance, by which persons may buy as much insurance as they wish (as in the case of life insurance), the payments to be made to the insured on proof of illness. The insured may use his payments as he wishes to purchase medical care of his own choice, or he may use the money to meet his living costs while sick. Such systems, permitted under good state insurance laws, are sound in financial and actuarial principles and serve to facilitate habits of thrift.

It is my personal opinion that for the United States, at its present level of social and governmental development, any system of socialized medicine as above defined, on a national scale or compulsory for any economic group of our population, would result in a marked arrest of medical progress, a deterioration of the quality of service rendered, and a great increase in the cost of medical care without equivalent return in effective quality or quantity.

Further, I believe that while experimentation with such a system on a state-wide basis would face less serious hazards of poor performance and exaggeration of costs than would a national application, nevertheless the disadvantages, moral and social, of compulsion by government in this field of human relations would outweigh any problematic advantages which may be claimed for it. As an example of all that is undesirable, costly, and profitless in a proposal of socialized medicine for a given state, let me cite the so-called Goldstein Bill, introduced in the New York State Legislature of 1939 and listed under the 1940 proposals as Assembly Introductory Number 469. In this bill we have, in all its simplicity and complexity, precisely what the promoters of socialized medicine believe desirable and practicable. Let me quote the following significant paragraphs from the bill.

"General objectives and powers and duties of the department. (1) It shall be the objective and ultimate goal of the department to

improve and maintain the health of the people of the state and to render free of charge, under rules and regulations to be prescribed by the department, all medical, surgical, dental, nursing care and treatment, and all other services and facilities known to science and designed or adapted for use in all cases of sickness, accidents, and childbirth, to and for residents of the state, including free transportation to and from hospitals, maintenance in hospitals, the furnishing and supplying with out cost of medicines, drugs, and all medical, surgical, dental, and pharmaceutical supplies and appliances required or deemed advantageous for the care, treatment, recovery and rehabilitation of a sick or injured person.

"The department shall have and exercise exclusive charge and control over all of the public hospitals of the state and of the staffs, officers, and employees thereof and shall have and exercise complete supervisory powers over all private hospitals and the staffs, officers, and employees thereof."

I doubt if reasonable men and women with their own and their neighbors' medical interests at heart will accept or, if it were passed, could live content and well served under any such law and its application to all people and all their medical needs, and to all the members and institutions of the medical and associated professions in New York or any other state in the United States.

Whether without compulsion and without a unit of population at least as comprehensive and stable as those of some of our larger states a plan of socialized medicine could be made effective I do not know, but I suspect that it could not.

If such a plan is not to be recommended on a compulsory basis, it might be tried as a voluntary scheme for those who wish to engage in it under suitable insurance supervision within the limits of the state or smaller political unit such as a large city or group of counties. I do not recommend such an experiment to any state or community, but I believe it should be allowed by permissive legislation if a sufficient body of voters and legislators can be found to support it and if the general tax-paying public of the nation can be protected against financial exploitation when the members of the plan of socialized medicine find they cannot meet the costs from their own tax resources, which will quite surely prove to be the case.

I believe that no federal legislation such as the Wagner Bill of the last session of Congress

# Annual Reports

## Medical Society of the State of New York

1940-1941

### Report of the President

#### *To the House of Delegates, Gentlemen*

As my term of office comes to a close, I am led to consider how burdensome the duties of the presidency might be were there a less efficient state organization. Thanks to the proper functioning of the administrative and advisory groups within our State Society, my task has been rendered easy and altogether pleasant.

The council, the several committees, the general manager, executive officer, counsel, the director of publicity, and office personnel—all have given a splendid demonstration of loyal, willing service. I am grateful for the high privilege of being associated with them in the promotion of common interests.

The tragic march of events across the seas has shattered our people's dream of a country at peace with the world, and has made necessary the adoption of a program for adequate national defense. Perhaps among no other group is the impact of the present crisis felt more strongly than among the members of the medical profession. In the selection and maintenance of a vigorous and healthy armed force their aid is of paramount importance, to a civilian population, subject to the added emotional and physical ills of a wartime economy, they must be prepared to minister.

In furtherance of a program of aid in the present emergency, the members of our Military Preparedness Committee and those of the Public Health and Education Committee have given unselfishly of their time and effort. The Military Preparedness Committee, with the help of chairmen in every county society, has furnished the draft and advisory boards under the Selective Service Act with a roster of physicians available for the examination of draftees. It has also drawn up plans looking to the proper medical care and treatment of the civilian population in the event of war, informing itself as to the adequacy of staffs and equipment in every hospital in the state.

The Public Health and Education Committee, acting with the State Department of Health, has arranged a program of postgraduate courses for the physicians in the different sections of the state, who wish to be kept informed on the new methods used in the care and treatment of victims of war. The work of these committees, in the nature of things, has a particular value, and too much credit cannot be given to their members for a task well done.

Also, it is fitting to note the splendid cooperation accorded these committees by the Committee on Publication and the Committee on Publicity which have given public and profession

alike much timely information relative to preparedness activities.

The Public Relations and Economics Committee with its subcommittees on Public Welfare and on Medical Indemnity Insurance and the Workmen's Compensation Committee merit commendation for the zeal with which they have applied themselves to the study of some difficult problems.

There is little to report in the matter of medical expense indemnity insurance. This plan, as approved by the State Society after much study, represents a laudable attempt upon the part of organized medicine to aid in the solution of a vexing welfare problem. Should it be adopted widely, the plan undoubtedly would bring needed relief in the form of adequate medical care to those of our wage-earning population in the moderate income brackets. But the idea is new and the public is reluctant to buy this form of insurance at the present time. There is ground for hope that the plan, if given a fair trial over a space of a few years, will meet with a more favorable response.

However, this hesitancy upon the part of the public to subscribe to the medical profession's voluntary health insurance plan carries with it a feeling of reassurance in the presence of the ever-menacing specter of socialized medicine and compulsory insurance legislation. It is not conceivable that the thinking public would reject a voluntary insurance plan in favor of one of a compulsory nature in which the physician-patient relationship is bound to be impaired.

While measures for national defense have overshadowed, in recent months, easy agitation for federal or state legislation in regard to socialized medicine or compulsory health insurance, we must remain ever watchful if we wish to maintain our present tried and truly progressive system of caring for the health of our people. This threat to the integrity of the profession can best be resisted by physicians themselves continuing to win and retain the confidence of the public. Such confidence will be established, in the measure that each of us succeeds in holding to the strict ethical standards set by the medical profession. We have dedicated our lives to the maintenance of a noble ideal of unselfish service. Today that ideal is being challenged from without by those of little understanding. Shall we, too, challenge that ideal by our indifference to the value of the sterling principles handed down as a precious heritage by those who have gone before us?

JAMES M. FLYNN, M.D., President

February 25, 1940

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April 1, 1941]

## REPORT OF THE SECRETARY

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**Coordination of Activities** The Council and its committees have continued to function smoothly, wisely, and without overlapping of effort. In a number of instances it has been found worthwhile for two committees, the Public Health and Education Committee and the Public Relations and Economics Committee, to consider, together, subjects of import to both. Thus, different angles of approach have been utilized. Particularly has this method been valuable where conferences were held with representatives of other organizations or government departments. Industrial health, the school health program, laboratory medicine, and other matters have been thus discussed.

Five subcommittees, on School Health Program, Medical Expense Insurance, 4-H Clubs, Maternal Welfare, Medical Relief, also have been hard at work in their special fields as shown in the Council Report. They have proved very helpful to their parent Council Committees.

The Committees on Legislation, Constitution and Bylaws, Malpractice Defense and Insurance, Scientific Program, Scientific Exhibits, Arrangements for Annual Meeting (these last three constituting the "Scientific Assembly" Committee of which the general manager is chairman) have carried on and are carrying on in the regular way. The Advisory Committee on Ophthalmological Problems has been called into action once during the year (see Council Report). The Special Committee of the Society on Prize Essays (Dr. Chas. Gordon Heyd, chairman, Dr. Conrad Berens, and Dr. John E. Scarfi, all of New York) has reviewed five essays and will make its report in person at your meeting on April 29, 1941.

The new Committee on Medical Preparedness went into action immediately after its appointment on June 14, 1940. It has done yeoman work ever since. The headquarters office has given of its best from all hands to help in this emergency work—and has been glad, without reservation, to do its bit. There was first the State Society Questionnaire, then the job of meeting the request from the Governor for nominations for medical examiners for Local Draft and Medical Advisory Boards in the state to be set up under the Selective Service Act when and if passed, these nominations to go through the State Adjutant General's office in Albany and its echelon office in New York City. Both these tasks were undertaken and the office

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There are two departmental activities of the Society that deserve special mention and special commendation. The one is the work of the Bureau of Workmen's Compensation and the other, the work of the Bureau of Public Relations.

The Workmen's Compensation Bureau, under the industrious management of its director, Dr. Kahski, has continued to work busily for the interests of physicians under the Workmen's Compensation Law. Your secretary is at all times in close contact with this work in the headquarters office. It can best be described as a source of real security for the physicians of the state qualified for compensation work.

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Your general manager in his contacts and work with the committees and the bureaus wishes to record his sense of privilege and pleasure in serving with them and helping to the best of his ability the coordination of effort. He wishes especially to express his deep personal gratification over the chance to aid in medical preparedness as a significant part of this country's present need to defend itself for all time and in all ways.

In closing this report, I wish to take this occasion to extend my sincere thanks to the general staff under the able supervision of Miss Dougherty. Their work has been loyal, devoted, and unflinching.

Respectfully submitted,  
PETER IRVING, M D, Secretary

March 3, 1941

## Report of the Council

To the House of Delegates, Gentlemen

Your Council has the honor to report on its executive and administrative management of the affairs of the Society during the period following your last meeting on May 6-7, 1940. The various matters before it are here presented in twelve successive parts.

### PART I

#### Postgraduate Education

The keynote of performance of the education duties has been the expansion in amount and kind of postgraduate teaching open to members.

of the Society. Following the untimely death on April 12, 1940, of the former Chairman of the Committee on Public Health and Education, Dr. Thomas P. Farmer, the personnel of the Committee was realigned, as follows:

Oliver W. H. Mitchell, M D,  
Chairman  
George Baehr, M D  
Charles Dayton Post, M D

Syracuse  
New York  
Syracuse

The Council approved the following report which summarizes the work of the year in or-

## Report of the Secretary

*To the House of Delegates, Gentlemen*

Another unusual administrative year has passed since your last meeting on May 6 and 7, 1940. The regular work of the headquarters office has gone steadily forward but with certain newer methods needed and developed. The co-ordination of the activities of the Society has called for a faster pace with the addition of new functions for the Council, its Committees, and the Management.

**Membership** Elected in 1940 were 1,045 new members, 246 were reinstated. The net increase as shown in the second table below was 624.

Membership—December 31, 1939	16,785	
New Members—1940	1,045	
Reinstated Members—1940	246	18,076
Deaths	199	
Resignations	105	304
		17,772
Dropped for nonpayment of dues—December 31, 1940		363
Total Membership, December 31, 1940		17,409

Honor counties (none of whose members failed of their dues in 1940) include Cattaraugus, Chenango, Columbia, Essex, Fulton, Genesee, Livingston, Madison, Orange, Putnam, Schuyler, Seneca, Sullivan, Tompkins, Washington, Wayne, Wyoming, and Yates.

Comparative totals in the period of continued rapid increase that began in 1935 follow:

1935	14,064
1936	14,662
1937	15,529
1938	16,177
1939	16,785
1940	17,409

**New York Office** The move to 292 Madison Avenue has proved most satisfactory and the expectations expressed for improvement in working conditions have been fully realized. The mid-town location makes for greater convenience of members and officials coming from outside the city. The bringing together on one floor of the different departments saves time for all concerned in office routines, and this has been reflected in the ability of the clerical force to take on the expanding amount of work that has come. It has been possible to hold an increasing number of meetings without interfering with office routine. In addition to the meetings of the Council, the Trustees, and the Committees, the Board of Directors of the Physicians' Home, Inc., and the Coordinating Council of the five county medical societies of Greater New York meet regularly in the office. The new Tuberculosis Conference Committee set up to speed eradication of tuberculosis in New York State has held one meeting in the office by invitation.

In the course of the year various office systems have been revised so as to do a more efficient job with certain tasks that center in the

office production of the JOURNAL, production of the *Directory*, sale of space for technical exhibits at annual meetings, membership files, roster of all physicians in the state, and the biographical file for the *Directory*. Changes have been made as a result of study by the Council Committee on Office Administration and Policies that was authorized at your last meeting.

As a starter, the business sides of the JOURNAL and *Directory* publication and sale of space for technical exhibits were combined and assigned to Mr Dwight Anderson as business manager, responsible as such to the Publication Committee and the Committee on Scientific Assembly, respectively. In this way the long experience of Mr Anderson in publication production has been put to good use. Mr Kent Lighty and his organization, whose services have been engaged to sell space to advertisers in the JOURNAL and *Directory* and to technical exhibitors at annual meetings, are directly under the management of Mr Anderson. Financial arrangements with the printers for purchase of paper and billings to advertisers all come into the hands of Mr Anderson, who has proved himself a tower of strength in the field of business handling of the three tasks.

The previous system of compilation of the *Directory* and the filing systems in that connection and in regard to membership and the alphabetical roster of all physicians in the state came under scrutiny of the Publication Committee. The new auditors, J K Lasser & Company, who have expert experience in that field, made an office study of these matters with a view to improvement and possible reduction in cost. It had looked as if the old system would steadily mount in cost. As a result of the study, changes were recommended and installed. Necessarily, there had to be some initial expense—nonrecurrent—to effect the changes, but a definite annual saving in cost of clerical labor to maintain the files and compile the *Directory* is foreseen.

It has been thought well to have a Position Analysis made of individual duties of the clerical force in the effort to save duplication of work, secure most efficient use of time, and systemize remunerations. This has also been done by J K Lasser & Company. A report on the subject will be made in the near future to the Office Administration and Policies Committee.

**Council Bulletins** There has been an unfortunate interruption of the flow of Bulletins of Council Proceedings within the prescribed time—"after each meeting and before the next meeting"—during the past year. Unexpected, new, and demanding matters have interfered, particularly medical preparedness. One bulletin went out for the May and June meetings. It has just become possible to send two more, the one covering the five meetings, September, 1940, to January, 1941, and the other for the February 13, 1941, meeting.

Single matters of pressing nature, it is true, have been made the subject either of special memoranda to the county societies or have been published in the JOURNAL. This, however, does not fulfill the entire obligation and steps are being taken to ensure regular sendings.

# REPORT OF THE SECRETARY

707

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Chairman  
George Baehr, M D  
Charles Dayton Post, M D

Syracuse  
New York  
Syracuse

The Council approved the following report which summarizes the work of the year in or-

ganization and presentation of postgraduate medical instruction to the county medical societies and other medical groups

"When the Council Committees were appointed following the Annual Meeting of the Society in May, 1940, the Chairman of the Committee on Public Health and Education called a meeting of the Committee, with the Commissioner of the State Department of Health and representatives of the various divisions having to do with public health problems. The purpose of this meeting was to integrate the work of the Committee with the government agency and each representative of the Department was asked to report on the needs for instruction in his special subject, the preparations of his division to meet these needs, and the financial aid, if any, which the division could contribute to a joint endeavor in this field. In the light of this discussion, plans were made for instruction in obstetrics, pediatrics, tuberculosis, syphilis, rheumatic fever, orthopedics, cancer, and pneumonia, in conjunction with the customary courses on general subjects in all fields of medicine

"Following this meeting, letters were sent to all of the physicians who had arranged courses in previous years, asking their continued cooperation, and suggesting the revision of some courses, in view of changes in personnel, scientific advances, and the addition of some of these new subjects. Meanwhile, letters were also sent to each of the county medical societies, telling of the proposed expansion of the work, the type of course to be offered and requesting that county medical societies desiring instruction notify the Committee as soon as possible, noting the subjects of interest to their members, and the time of year when the lectures would be wanted. Twenty-two requests for information had been received before the *Course Outline Book* was ready for distribution, and since that time, seventeen more requests have been received

"When revision of all the courses had been completed, a second meeting with representatives of the State Department of Health was called to determine the extent of the work and the amount of money necessary to carry it on. At this meeting there was brought up the possibility of arranging whole-day sessions on special subjects, either at teaching centers or State hospitals. Accordingly, there was inserted in the Book announcement of such sessions to be arranged when the demand indicated. As a part of the Defense Program, there was also included in the Book, a list of Plastic and Reconstructive Surgeons, who would give single lectures on this subject to acquaint the general physicians with the advances made in this science. The Book, as published, contained the outlines of forty courses, on the following subjects: dermatology, general medicine, malignant disease, neurology, obstetrics, orthopedics, pediatrics, physical therapy, sanitation and public health, surgery, and syphilis, and, in addition, announcement of Teaching Day plans and single lectures on special subjects, including plastic and reconstructive surgery

"The State Department of Health agreed to carry an item in the budget of \$2,000 for the honoraria to physicians speaking on subjects of a particular public health nature, either in single lectures, teaching days or institutes, with the in-

timization that more money could be obtained if necessary

"When this understanding had been reached, the *Course Outline Book* was mimeographed and bound, and copies were distributed to the county medical societies which had requested them. In addition to these circulating copies, the Commissioner of Health and some of the division directors, the officers of the State Medical Society, and the members of the Committee on Public Health and Education were given copies for reference

"Requests for specific courses were received almost immediately, and since that time this office has made arrangements for postgraduate instruction in twenty-eight county medical societies at an estimated cost of \$3,817.38 to the State Medical Society and \$1,175 to the State Department of Health. As many of these courses are still in operation, the cost cannot be computed exactly. In addition, three county medical societies have requested instruction, and while it is impossible to estimate how much this will cost, it would be unwise to allocate less than \$450 for this work

"The above figures concern courses, and teaching days, held in the local county medical societies. In addition to this work, an Institute on Radiology was held at the Syracuse University College of Medicine, Syracuse, on January 18, 1941, in cooperation with the Central New York Roentgen Ray Society and the Division of Cancer Control of the New York State Department of Health. As its contribution to this Institute, the Committee arranged for publicity, sending notices to all county medical societies, the radiology societies of New York State, the *NEW YORK STATE JOURNAL OF MEDICINE* and the *Journal of the American Medical Association*, the *Journal of Radiology*, *Health News*, and the local press. Invitations were also sent to all radiologists and pathologists practicing in the area of central New York. The Committee paid the expenses of the speakers while they were in Syracuse, e.g., hotel rooms, meals, etc., and arranged a luncheon in their honor. The dinner arrangements were also made by the Committee. Expenditures for this Institute amounted to \$78.37

"The Committee also assisted in arranging an Institute on Pneumonia in Rochester, on January 21, 1941, by publicizing the affair throughout the neighboring counties. The cost was merely that of mailing the notices, approximately \$7.29

"As a part of the Defense Program, the Committee has arranged for a lecture on 'Aviation Medicine,' for the Syracuse Academy of Medicine, to be given by Dr. Louis H. Bauer

"The Committee cooperates with the Subcommittee on Maternal Welfare and incurs some expense in connection with programs, correspondence, and other activities. A regional Maternal Welfare Teaching Day is being arranged to be held in Syracuse on Thursday, April 3, 1941, in cooperation with the Division of Maternity, Infancy and Child Hygiene of the State Department of Health. As with the Radiology Institute, the Committee is arranging the publicity and sending notices regarding this meeting, and will pay the traveling expenses of the lecturers. The State Department of Health will pay the honoraria. A similar regional Maternal Welfare Teaching Day will be held in

Rochester on April 9, 1941 The Committee has assisted with these arrangements and will pay the traveling expenses of the principal speaker

"The Rheumatic Fever program, in cooperation with the State Department of Health, will require considerable attention A recent conference with the government representatives resulted in a very satisfactory understanding regarding the activities

"During the last year there has been increased attention given to Industrial Health programs, and the Committee has conferred with the State Departments of Health and Labor regarding postgraduate instruction Plans are under consideration for expanding this activity and will be announced after further conference with these two agencies

"The many requests for information regarding this work indicate that even with the assistance of the State Department of Health, the present appropriation will probably not permit us to fill the demand for instruction, and at the same time permit us to take part in the Defense Program by presenting other emergency instruction. In the light of these circumstances, an additional appropriation to the Committee should be anticipated, and it is hoped that the Board of Trustees will grant it"

## PART II

### Public Health Matters

Certain matters that involve in one way or another the health of the public have been considered by your Council. These have been chiefly in the domain of the Committee on Public Health and Education, but frequently the Committee on Public Relations and Economics has been directed to take part in the studies and in actions based thereon.

**Maternal Welfare**—The Special Committee on Maternal Welfare of the Society (Charles A. Gordon, M D, Brooklyn, *chairman*, James K. Quigley, M D, Rochester, and Ferdinand J. Schoeneck, M D, Syracuse) has been continued as a Subcommittee of the Committee on Public Health and Education, in accordance with your action last year. The work has gone on along the lines then laid down.

A meeting was held by this subcommittee in Syracuse on October 31, 1940, at which were present Drs Gordon, Quigley, and Schoeneck, regional chairmen in Obstetrics, Drs Mitchell, Lawrence, and Irving, and Dr Elizabeth M Gardner, Director of the Division of Maternity, Infancy and Child Hygiene of the State Department of Health. Procedures were outlined whereby these chairmen can function in their regions.

The plans provide for surveys of maternity facilities, for stimulation of county societies in developing a maternal and child health program, for postgraduate refresher courses, for distribution of literature and standards, for accumulation of state and county statistics applicable to the problem of maternal and child welfare, for obstetric conferences in each county or region, for study of neonatal deaths, stillbirths, and particularly the problems of the premature infant.

Regional Chairmen in Obstetrics are  
1 New York, Richmond, Bronx.

- George W Kosmak, 23 East 93rd Street, New York
- 2 Kings, Queens, Nassau, Suffolk  
Harvey B Matthews, 643 St Marks Avenue, Brooklyn
- 3 Westchester, Rockland, Dutchess, Putnam, Orange  
Julian Hawthorne, Highland Hall Apartment, Rye
- 4 Schenectady, Fulton, Montgomery, Schoharie, Greene, Ulster  
William M Mallia, 1364 Union Street, Schenectady
- 5 Albany, Washington, Saratoga, Columbia, Warren, Rensselaer  
Joseph O'C Kiernan, 496 Madison Avenue, Albany
- 6 Clinton, Essex, Franklin, St Lawrence  
Elmer Wessell, 72 Clinton Street, Plattsburg
- 7 Jefferson, Lewis, Herkimer, Hamilton  
James L Crossley, 240 Woolworth Building, Watertown
- 8 Onondaga, Oswego, Oneida, Madison, Cortland, Cayuga.  
Edward C Hughes, 601 Medical Arts Building, Syracuse
- 9 Broome, Tioga, Chenango, Otsego, Delaware, Sullivan  
Stuart B Blakely, 140 Chapin Street, Binghamton
- 10 Monroe, Orleans, Wayne, Livingston, Ontario, Yates, Seneca  
Ward L Ekas, 176 South Goodman Street, Rochester
- 11 Chemung, Schuyler, Steuben, Tompkins, Allegany  
R. Scott Howland, 531 West Water Street, Elmira.
- 12 Erie, Niagara, Chautauqua, Cattaraugus, Genesee, Wyoming  
Robert C McDowell, 40 North Street, Buffalo

The Subcommittee has from time to time supplied special articles on obstetric subjects which have appeared in the JOURNAL

**Pneumonia Control**.—This combined effort of the State Department of Health, Medical Society of the State of New York, Metropolitan Life Insurance Company, New York State Association of Public Health Laboratories, Rockefeller Institute, and the Commonwealth Fund has been continued under the supervision of the Advisory Committee on Pneumonia Control of the State Department of Health. Definite decrease in mortality continues.

It is particularly noteworthy that during the year the State Department of Health, with the approval of the Advisory Committee, has been able to make provision for distribution of sulfapyridine and sulfathiazole for use in the treatment of pneumococcal infections in *patients for whom the purchase of the drug would prove a hardship*. Thus the cost of both serum therapy and chemotherapy for pneumonia is now underwritten by the State of New York from tax funds.

**4-H Clubs**.—Through another Subcommittee of the Committee on Public Health and Education, the Council has made contact for the State and County Societies with the 4-H Clubs of the state, which have a combined membership of over 31,000 boys and girls from rural districts

Dr J G Fred Hiss, of Syracuse, the chairman, who has been continuously active during the year, is discussing with this organization the possibility of promoting among the members of the 4-H Clubs a health program that might perhaps, if found useful, be later applied to other youth organizations of the state, such as the Boy Scouts and the Girl Scouts

With the approval of the Council, Dr Hiss has taken up with the organizations and with the State Departments of Health and of Education a suggested health program that would involve the following main factors

- 1 Annual complete physical examinations to be done by the member's own private physician and recorded on standard forms These reports to be brought by members to the County 4-H agents
- 2 Follow-up by County 4-H agents as to correction of recorded defects
- 3 The Most Perfect Boy and Girl Contests The County Medical Societies to help through their committees in finding member physicians to re-examine for contest purposes those chosen as candidates as health perfect.
- 4 While the annual examinations should be, in the opinion of the Society, paid for by the 4-H Club member, these later contest re-examinations could well be done without fee
- 5 An educational program on medical matters to come to County 4-H agents from the State Department of Health and County Societies
- 6 The entire program to be directed jointly by a committee upon which would be represented the 4-H Club agents association, the State 4-H Club office, the State Department of Health, the State Medical Society, and the State Department of Education

Much interest has been reported in these suggestions At the Buffalo meeting, in the Section on Public Health, Hygiene and Sanitation, there will be a symposium on Health Education for Youth Organizations at which they will be discussed

Proposed Medical School in New York State—The Council received an invitation from the Board of Regents of the State Department of Education to attend a hearing on June 20, 1940, on an application pending before that Board for a new medical school to be known as the "Gorgas Institute," to be located in the Borough of Manhattan The Council directed that the Committees on Public Health and Education and on Public Relations and Economics accept the invitation and oppose granting of the charter

The hearing was attended by Drs Mitchell, Hambrook, Lawrence, and Irving, who put the Society on record as instructed The Board of Regents postponed action on the application

Public Health Laboratories.—A committee of the New York State Association of Public Health Laboratories requested a meeting with the Chairman of the Committee on Public Health and Education regarding a memorial which was submitted to our Council last year It was agreed that this memorial be revised and resubmitted This was done, and a part of the understanding was that the revision, with its accompanying proposals, was to be printed in

the JOURNAL The proposals referred to are the following

- 1 That the Council of the Medical Society of the State of New York arrange with the New York State Department of Health for the distribution of pertinent information concerning approved laboratories to every physician in the state
- 2 That the director in charge of a public health laboratory submit regularly to the appropriate committee of the county medical society, a report with explanatory comments and discussions of the examinations performed during the period
- 3 Such reports should be reviewed at meetings of the county society to familiarize the physicians with the services available, with accompanying remarks concerning the use or lack of use of laboratory facilities
4. That at least once a year, or more often if indicated, representatives of the Council of the Medical Society of the State of New York, of the Division of Laboratories and Research of the New York State Department of Health, and of the New York State Association of Public Health Laboratories confer regarding public health laboratory service in the state and discuss ways and means of improving it
- 5 That the Medical Society of the State of New York publish in an early issue of the JOURNAL the above statement with its accompanying proposals and that from time to time, other articles or news items be published in the JOURNAL concerning public health laboratory facilities in the State of New York

Laboratory Medicine—The House passed to the Council the following resolution

*"Be It Resolved That*

- 1 The House of Delegates go on record as disapproving laboratory medicine by laymen or nonmedical personnel
- 2 That measures for establishing a proper relationship between city and state departments of health laboratories and physicians who practice pathology be endorsed
- 3 That the work of state and city departments of health be limited to the diagnosis of communicable diseases except where the diagnostic facilities of state and city health departments are the only diagnostic means available for indigent patients"

Conferences have been had with representatives of the Joint Council on Pathology, Radiology, Anaesthesia, and Physical Therapy in the effort to clarify the situations which the resolution seeks to adjust

Particularly in regard to the proposed limitation of service by government-operated public health laboratories was there much discussion It is planned that, in order to work out a better understanding the Committees on Public Health and Education, and Public Relations and Economics have a conference with representatives from the State Department of Health, the Joint Council on Pathology, Radiology, Anaesthesia, and Physical Therapy, and the State Association of Public Health Laboratories

Tuberculosis Conference Committee—A new committee came into being under the auspices of the State Department of Health for the pur-

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pose of promotion of "activities looking toward the intensification of services for the control of tuberculosis in Upstate New York." As constituted, it has on it the Commissioners of the State Departments of Health, Social Welfare, and Mental Hygiene, representatives of the State Charities Aid Association and the Metropolitan Life Insurance Co., and Dr. Irving was invited to sit as representing the State Medical Society. Dr. Irving accepted with the approval of the Council.

The objective of this committee is the eventual eradication of tuberculosis from the State of New York. It was first given the name of the "Tuberculosis Cooperating and Coordinating Committee," but this it later changed to that of the "Tuberculosis Conference Committee." It has held to date (March 15, 1941) three meetings, the second of which was, on invitation, at the Society's New York office. At that meeting, on request of Dr. Irving, the members of the State Medical Society's Committees on Public Health and Education, and Public Relations and Economics, were invited to sit in and discuss ways and means of speeding up con-

Particularly, stress was laid on the need for examination and x-ray of more "contacts" of registered cases. The Council, at its February 13, 1941 meeting, heard and discussed with Dr. Robert E. Plunkett of the State Department of Health, General Superintendent, State Tuberculosis Hospitals, the existing facilities and possible expansion of this work. The Council referred this problem to its Committees on Public Health and Education, and Public Relations and Economics, for study and report.

**Tattoo Code for the Serum Sensitive**—Two of those injured in the train wreck at Little Falls, New York, in April, 1940, were found sensitive to serum when the physicians came to administer tetanus antitoxin. From this experience was born the idea that it might be useful if a practice be established and commonly accepted to put a tattoo on the bodies of such people. This would perhaps even save life. Carrying the idea on, the physicians concerned thought also of tattoo marks to indicate diabetes and epilepsy.

After study by its Committee on Public Health and Education, the Council went on record as not approving such a code on the grounds that it would not be readily accepted, could not be made compulsory, and could, and probably would, be subjected to improper use. The Council does advocate identification by cards or tags carrying authoritative information.

**Demolition of Manhattan State Hospital**—The attention of the Council was called to a growing opposition to demolition by 1943 of this State Hospital for Mental Disease on Ward's Island, New York City, as provided in an Act passed in 1933 by the Legislature. A hearing on the matter was held by the State Temporary Legislative Commission to Formulate a Long Range State Health Program on February 7, 1941.

Dr. Irving attended that hearing and reported that the Department of Mental Hygiene was in opposition because its other hospitals are already badly overcrowded and it would not know where to send the 2,400 patients now in

the Manhattan State Hospital. The New York City Welfare Council and the New York Academy of Medicine registered opposition, as well as the State Charities Aid Association. The Council considered this matter, involving as it does overcrowding of mental hospitals in the State, of sufficient importance to refer it to its Committees on Public Health and Education, and Public Relations and Economics, for study and report.

## PART III

### School Health Program

Following your last meeting, the positions taken were transmitted through the Committee on Public Health and Education to Commissioner Ernest E. Cole of the State Department of Education and later to the members of the Board of Regents. Therefore there can be no misunderstanding as far as the State Medical Society's standing is concerned.

At that meeting the following conclusions reached by the Council were approved by the House:

"That work in the schools that is distinctly of a medical nature should be under the direction of a physician who should be responsible to the executive administrators or school board, and not to them through an intermediary person who is not a physician while matters of an educational nature should be in the hands of those who were trained to be teachers."

"That the aims of School Health Service should be to provide the best type of health service possible for all school children, whether attending public or private schools, in order to impress on the child what should comprise good medical care, and that the advice given to children should be based only on complete and careful examination."

Also the following recommendations were adopted by the House:

"That a change be made in the organization of the present Division of Health and Physical Education, preferably that the present bureau of health service be transferred to the State Department of Health, but that if this is not possible, such a division be organized in the State Department of Education, and that to it be assigned all medical problems, while the teaching of health, including physical education, be left, as at present, in the Division of Physical Education of the State Department of Education, so that the teaching of health would be in the Department of Education, as heretofore, while the supplying of health service would be either in the State Department of Health or in a separate division headed by a medical man."

"That in the administration of Health Service in the schools, the employment of private physicians be encouraged wherever possible."

Into this picture there came last fall a meeting of the Regents' Advisory Council, at which Dr. Hambrook represented the State Medical Society. That body passed two recommendations to the Board of Regents on which Dr. Hambrook found it necessary to ask that his

opposition be recorded as a minority report. This action on the part of Dr Hambrook was endorsed by the Council.

One of those recommendations was in opposition to the stand of the Society in favor of division of the Health and Physical Education services into two departments, or transfer of the health service to the Department of Health. The other was against the stand of the Society that the separate Health Service division be headed by a physician.

Dr Hambrook later received a letter from Commissioner Cole in which he said:

"At the meeting of the Regents which occurred the day following the discussion of the health program by your Council, they provided for a permanent Committee of the Board of Regents and also appointed a temporary Commission of five members, headed by Mr Young, to give immediate attention to the health program as requested by the Governor.

"I want to take this occasion to thank you for your interest and assistance in the development of this most important phase of education."

Into this picture came, also during the winter, proposed federal legislation on physical education in the shape of the so-called Schwert Bill. This bill was replaced by a new Schwert Bill which radically changed the original bill to omit reference to medical and health activities, but the Council went on record as opposed to the bill as unnecessary federal legislation and generally undesirable.

The problem of improvement of the present school health program in New York State remains unsolved. The Council, considering the matter of prime importance, last June created a Subcommittee on School Health Program of the Committee on Public Health and Education to study and advise. This Subcommittee consists of:

E Christopher Wood, M D, *Chairman*

Albert D Kaiser, M D	White Plains
A. Clement Silverman, M D	Rochester
	Syracuse

**Future Dental Health**—The Council has considered that in the school health program particular attention is needed to insure better dental health than now exists. The large number of rejections in the present draft, because of dental defects, necessarily harks back to dental care, prenatal and in infancy and childhood. The Committee on Public Health and its Subcommittee on School Health Program, with the Committee on Public Relations and Economics, have taken up this matter in conference with representatives of the Dental Society of the State of New York. On February 25, 1941, the conference was held, at which were present:

#### FOR THE MEDICAL SOCIETY

Oliver W H. Mitchell, M D  
George Baehr, M D  
A. Clement Silverman, M D  
Louis H. Bauer, M D  
Samuel J. Kopetzky, M D  
Peter Irving, M D  
Laurance D. Redway, M D  
Dwight Anderson

#### FOR THE DENTAL SOCIETY

Charles A. Wilde, D D S  
H S Dwyer, D D S

group decided to recommend to both the parent organizations that a joint committee be created by appointment of three physicians and three dentists to act as a continuing committee to work out a future dental health program by the closer coordination of medical and dental society effort. The Council approved the setting up of such a joint committee, and the Secretary was instructed to so advise the Dental Society of the State of New York. The selection of the State Medical Society members of this joint committee will be made at the meeting of the Council on April 29, 1941.

**Eye Care Survey in Public Schools of the State**—The State Department of Education received a request from the American Optometric Association for permission to make a survey of eyesight in the public schools of New York State. The Department asked the opinion of the State Medical Society through Dr Hambrook, as Chairman of the Council Committee on Public Relations and Economics. Dr Hambrook brought the query to the Council, which immediately passed it on to its Advisory Committee on Ophthalmology Problems.

Conrad Berens, M D, <i>Chairman</i>	New York
H W Cowper, M D	Buffalo
Thomas H Johnson, M D	New York
Searle B Marlow, M D	Syracuse
Albert C Snell, M D	Rochester

The Advisory Committee recorded its unanimous opinion that such a survey should be made only by medical men—ophthalmologists. This opinion was sent, with the approval of the Council, to the State Department of Education.

## PART IV

### Publications

Experience, literary and financial, for production of the NEW YORK STATE JOURNAL OF MEDICINE during the calendar year 1940 is most encouraging for the future. Production factors of the *Medical Directory of New York, New Jersey and Connecticut 1939-1940* edition have been made the subject of close study. As a result it is expected that the issue to appear on October 1, 1941, will be more satisfactory as to text and as to cost.

It has been found effective to vest responsibility for the conduct of JOURNAL and Directory production in a local Council Committee on Publication of five, consisting of the General Manager, the Business Manager of the JOURNAL and Directory, Literary Editor, the Treasurer, and a member of the Board of Trustees. This Committee has been able to meet on short notice and to decide various questions with despatch.

**Journal**—From the editorial angle it can be reported that the current of articles submitted has continued at the high level of a total for 1940 of 285. During the year there were published 229 scientific articles with a total of 1,240 pages.

Other text content has included Editorials, Medical News, Hospital News, Books, Medical-legal, with the addition of Sections on Public Health News, Maternal Welfare, Medical Relief and Society activities of special import on various subjects. There have been added two new scientific sections to run at intervals, the one entitled "Therapeutics" and the other, as a companion piece, "Diagnosis."

After a discussion covering many points, this

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The section on "Therapeutics" reports Conferences on Therapy held regularly at the Cornell University Medical College between the Departments of Medicine and of Pharmacology, under the chairmanship of Dr. McKen Cattell. In the Section on Diagnosis, two hospitals supply similar conference discussions of cases where diagnosis has been checked with pathologic autopsy reports. One is from the New York Post-Graduate Medical School and Hospital under the chairmanship of Dr. Irving Wright, and the other from the Fourth Medical Division of Bellevue Hospital under the chairmanship of Dr. Charles H. Nammack.

It has also been arranged to publish the Transactions of the meetings of the New York Pathological Society. Previously these have appeared in the *Archives of Pathology*. The Publication Committee accepted the offer of these, not only because the cost of printing will be met, but because it felt that pathology is basic for all medicine—clinical and research. It is glad to have these Transactions for the JOURNAL's large circulation—now 18,343.

The format with the beginning of 1941 was changed considerably in order to have a more readable type with more words per page. In this way the text content is being increased and the greater demands for space met in part, at less cost than if the former style of type were used.

Financially, the Council is happy to report the experience for 1940 has been gratifying and the promise for the future attractive. In 1939 the total net cost was \$24,391 97 while in 1940 it dropped to \$15,391 32. In 1939 the cost per member (using the average figure for membership—16,594) was calculated at \$1 46. For 1940 the corresponding figure (average membership 17,087) was only 90¢.

This satisfactory result was obtained under the management policy of the Society of maintenance of a business department for the JOURNAL which addressed careful attention to the details of its administration. Pursuant to this policy it has been possible to accomplish savings in production expense on a threefold basis, fewer pages per issue (total 2,400 instead of 2,800), savings in printing cost by 5%, and lower cost of paper since purchased by the Society. Coupled with these savings the net income from advertising has materially increased.

Considering this favorable financial situation and evidence at hand of future augmented advertising income, it was decided late in 1940 to increase the size of the JOURNAL in 1941 by sixteen pages—112 instead of ninety-six. The typographical changes recorded above aid in giving space to more text content. It is the hope of the Council that with continuance of management along these effective lines, the JOURNAL may reach a point of paying its own costs and perhaps even be a source of future revenue to the Society.

**Directory**—The final total cost of the 1939-1940 Directory was \$20,010 40 or about 95¢ per volume on a 21,000 print order. While the book contained ninety-six more text pages and twenty-eight more advertising pages, it was thought that savings could, in the future, be accomplished by revision of the previous system of compilation, which had been built originally on production of

a much smaller and less pretentious volume. Savings in production costs and increase in income had been thus offset in cost of compilation. After study by experts the system of compilation has been so revised as to promise savings in producing copy, using punch-card devices for saving time and avoiding errors. Text matter will go to the printer on cards in better condition for composition. Much time and expense of compilation should ultimately be saved by use of these modern methods.

At your last meeting you authorized addition of data under physicians' names of hospitals of internship and residency. A further study of this plan convinced the Council that the cost of this additional data was sufficient to justify the omission in the 1941 edition. The total number of physicians, most of whom would have had one or more designations, listed in the 1939-1940 edition was

New York State  
New Jersey  
Connecticut

24,777  
5,332  
2,500  
32,509

The cost of printing and paper would have been much increased.

Criticism of the last edition has been received because of the shift of the New York City Boroughs from the front of the book to its natural alphabetic position under the letter N. On investigation the difficulty seems to be that what caught the eye at the top of these pages was not the name of the town, New York City, on the left-hand page, but the word *Borough* (of Bronx, Brooklyn, Manhattan, Queens, or Richmond, as the case might be). This it is planned to remedy by running the name of the town on each page in capitals—NEW YORK CITY—and then, after a dash, Borough of Bronx, etc., in capitals and lower case.

## Medical Publicity

The year just passed has been one of continuous and regular publicity of a positive character to interpret the activities of organized medicine in New York State to the public. The importance of the medical profession in the daily lives of the people is a matter they are prone to forget unless they are reminded from time to time by the recital of concrete matters in which the profession is importantly concerned on their behalf.

Due perhaps to defense preparations, the issue of socialized medicine has been momentarily placed in the background in the public mind, and unless and until it becomes a matter of pressure for legislation, and concurrent publicity by its exponents, the ammunition stored by the Public Relations Bureau in the six years of its existence remains in reserve. In this respect the Bureau may be considered as insurance against surprise attack.

To be in greater readiness should the need arise, our direct mailing list has been increased by making addressograph stencils of more than 5,000 new names of important key laymen throughout the state. In this, the help of county society secretaries has been invaluable. The list is locally hand-picked. We now have an exceptionally well-chosen list to whom our printed matter may be sent.

During the year, releases to the daily press of

the state were issued concerning the district branch meetings. Special ready-to-print plate matter was provided to 281 weekly newspapers in the various districts.

Special releases went to the press concerning the postgraduate courses conducted by the Council Committee on Public Health and Education. These related to courses held in the following counties: Chemung, Chenango, Columbia, Dutchess, Fulton, Genesee, Madison, Monroe, Nassau, Oneida, Onondaga, Oswego, Otsego, Rockland, Saratoga, Schenectady, Tioga, Tompkins, Wayne, and Wyoming.

A release to the press was issued concerning the Radiology Institute, held at Syracuse on January 18, under the auspices of the Central New York Roentgen Ray Society, Medical Society of the State of New York, Syracuse University College of Medicine, and the Division of Cancer Control of the New York State Department of Health.

The physician's importance in defense was indicated in a release concerning the issue of the JOURNAL for July 15, a "Military Medicine" number. The fact that army rejections did not signify that the American people are receiving insufficient medical care was the subject of another release based on an editorial in the February 1 issue of the JOURNAL. This was widely used by newspapers throughout the state. Clippings kept in scrapbooks in the office of the Bureau reflect the use of this material.

A report on the progress of medical indemnity insurance was presented to the Council at its February meeting, and on the following day, at a meeting of county society legislative chairmen at Albany, the material was presented again, and released to the press throughout the state.

The Bureau cooperated in obtaining publication in the *Journal of Living* of an article by Dr. Samuel J. Kopetzky, answering one by Robert Wagner, Jr. Reprints of this article were distributed to our direct-mail list.

The Bureau assisted the publishers of the *Nation's Business* in the preparation of an article, "The Case for Private Medicine." Reprints of this article were distributed.

A condensed version of an article appearing in the JOURNAL, "Give the Doctor a Break," by Dr. Floyd Burrows, was made ready for distribution March 1. It is expected that part of the stock of 60,000 will be used to fill orders from medical organizations outside the state which have indicated an interest in this article.

Reprints of scientific papers appearing in the JOURNAL on human refrigeration were published in a single document primarily to be offered as a premium to new subscribers to the JOURNAL. Enough copies were secured to enable the Public Relations Bureau to send one to each of the 200 libraries in the state. A surplus remained of copies of the *Directory* of New York, New Jersey and Connecticut over the number needed for our use, an offer was made to newspaper editors and librarians in the state to send a copy free on request. More than 300 requests have been filled.

Reprints of "A Study of County Society Activities," by Dr. Joseph S. Lawrence, were made from the January 15 issue of the JOURNAL and supplied to all libraries in the state, presidents and secretaries of county medical societies, and to others on request.

"Club Talks" formed a new type of bulletin started in October, 1939. It is designed to provide speakers before luncheon groups, women's clubs, and civic organizations, with prepared material on various aspects of health. The idea was suggested by Mr. James E. Bryan, executive secretary of the Westchester County Medical Society, who obtained the cooperation of women's club groups throughout the state in the distribution and use of the material. Mr. Bryan's assistance in the preparation of the material was a notable contribution to the work of the Bureau during the year. The issues have included the following subjects: "Mental Health in Childhood," "What Everyone Should Know about Cancer," "Pneumonia and the Common Cold," "Rheumatic Heart Disease," "Preventive Medicine and Child Health," "Tuberculosis," and "Maternal Welfare."

Pursuant to the mandate of the House of Delegates to engage in radio activities, the Public Relations Bureau first made a study of the use which medical organizations already have made of radio. Questionnaires were sent radio station directors throughout the country, and a bulletin issued, "The Doctor Takes to the Air." The findings are best described in the following quotation from the *Service Bulletin* of the Federal Radio Education Committee:

"The Medical Society of the State of New York has tested the success of the radio efforts of doctors by sending a questionnaire to radio stations. The questions and the answers from 376 stations are brought together in a 28-page script. Many of the questions are of interest to educators.

"In brief, the stations, in their replies, stated (1) that material should be presented in a way to satisfy professional radio requirements as to dramatic values, (2) that medical societies are cooperative in providing speakers, (3) that medical speakers are interesting to a substantial portion of the radio audience, and (4) that medical programs may be improved by recognizing (a) that radio is more a stimulus to further thinking and reading than as a means of conveying information, and (b) that the successful use of radio for education challenges many time-honored traditions of the classroom, including the professor's 'sacred right to be dull'.

"The script is available on loan through the Educational Radio Script Exchange, U. S. Office of Education, Washington, D. C."

Correspondence with educators, radio officials, medical organizations and others resulting from the distribution of this bulletin fully corroborates our belief that the approach to the effective use of radio can best be made in an entirely different way than through the conventional "health talk" by a physician. It is not intended here to minimize the value of these talks, but to point out that they fall far short of achieving all the possibilities that radio holds for medicine. It should be mentioned, in passing, that the ultimate effect of much of medical use of the radio has been indirectly to encourage self-diagnosis and self-medication. The technic employed has been far too heavy, and talks have contained too much closely packed information, impossible of assimilation by the average radio audience. Studies recently made by the Rockefeller Foundation and others point out specifically how ineffectual is much that has passed for radio

education in the last ten years. Whether radio is at all a suitable educational instrument used alone, or whether it does not function better as a device for arousing interest to be further satisfied upon inquiry, is one of the important questions involved in forming a program policy. The Public Relations Bureau inclines toward the latter view.

Radio talks given in the past by many organizations have been placed at our disposal for study. It has been decided to utilize none of this material which is mostly of the conventional type. Rather, we are going on the air with a goodwill program, not to attempt what has been called "low-grade academic talks," but to present a public relations program of the Medical Society of the State of New York interpretative of the physician in terms of the public's faculty of understanding and appreciation. To this end, a dramatized half-hour evening program has been arranged, "Doctors for Defense," on a local New York station. It is expected that this program will become national after an experimental demonstration to determine the degree of audience response.

Wide publicity will be given this program both by direct mail on our part, and newspaper publicity by the radio station. The scripts will be made available to other medical societies through our bulletin service with permission to produce them in cooperation with local college classes in speech and radio.

Mr. Anderson, director of the Public Relations Bureau, participated in a radio program over radio station WOR with Dr. David Ulmar, assistant clinical professor of medicine, Post-Graduate Medical School, and Mr. Frank Kierman, director of the New York Tuberculosis and Health Association.

*What It Means to Be a Doctor*, of which 12,000 copies were printed in May, 1939, has met with a lively demand from every section of the United States. It was published in two formats: 9,000 paper-bound copies and 3,000 cloth-bound. The paper edition is now exhausted. Of the cloth edition, 1,010 copies remain. The cost of printing this book was \$1,869.01, income from sale of copies has been \$2,429.15, leaving a surplus of \$560.14 over the cost of printing.

Material is now being gathered for a companion book to *What It Means to Be a Doctor*, to be written by Mr. Anderson and to be ready for publication in the late summer of 1941.

Supplies of *On the Witness Stand* are on hand for wide, free distribution in the event of active agitation for compulsory health insurance. This edition, the second of the pamphlet, has sold 42,554 copies, and free distribution amounts to 14,550 copies. Charges for printing and promotion were \$2,576.58, income \$1,978.08, leaving a current deficit of \$598.35, which is more than covered by the value of the stock on hand.

Mr. Anderson was a guest of the Michigan Medical Society at its annual meeting in Detroit, September 24-27, 1940. He spoke on the subject of public relations before the Michigan House of Delegates, a county secretaries' meeting, and a meeting of physicians' office secretaries. The Michigan society decided at this meeting to organize a public relations program. Mr. Anderson also attended, during the course of the year, the District Branch meetings, the Health Officers conference at Saratoga Springs,

meetings of the Tuberculosis Coordinating Committee, and the usual stated meetings of the Council and Council Committees. In August, 1939, he attended an Institute for Organization Executives held under the auspices of Northwestern University at Evanston, Illinois.

Throughout the year much of the time of the Director of the Bureau has been engaged in conferences with the persons calling upon the Bureau for information, or for assistance in furthering projects of such a character that his cooperation with these persons inured to the benefit of the medical profession. He has also participated in the study of office administration authorized by the House of Delegates, having been designated as a member of the committee appointed for this purpose. His activities as business manager of the *JOURNAL*, *Directory*, and Technical Exhibits are not included in this report but the comment is pertinent that these activities have contributed to the facilities for handling public relations, both by increasing the director's personal contacts and by making possible a higher degree of coordination of the various activities in which he is engaged.

## PART V

### Medical Expense Insurance

The Subcommittee of the Council Committee on Public Relations and Economics set up in 1939 to study and advise on Medical Expense Insurance was continued by the Council (Herbert H. Bauckus, M.D., Buffalo, *Chairman*; Walter T. Dannreuther, M.D., New York; William Hale, M.D., Utica).

The Council received and approved the following report of the activities and opinions of this Subcommittee:

"Nonprofit Medical Expense Indemnity Insurance was approved by the House of Delegates of the American Medical Association at a special session held in September, 1938. The report of a special committee, unanimously adopted by that House, stated certain important policies and principles set forth as follows:

"Under Recommendation IV on a General Program of Medical Care Your committee approves the principle of hospital service insurance which is being widely adopted throughout the country. It is susceptible of great expansion along sound lines, and your committee particularly recommends it as a community project. Experience in the operation of hospital service insurance or group hospitalization plans has demonstrated that these plans should confine themselves to provision of hospital facilities and should not include any type of medical care.

"Your committee recognizes that health needs, and means to supply such needs, vary throughout the United States. Studies indicate that health needs are not identical in different localities and therefore they usually depend on local conditions and are primarily local problems. Your committee therefore encourages county or district medical societies, with the approval of the state medical society of which each is a component part, to develop appropriate means to meet their local requirements.

"In addition to insurance for hospitalization, your committee believes it is practicable to develop cash indemnity insurance plans to cover, in whole or in part, the costs of emergency or

prolonged illness. Agencies set up to provide such insurance should comply with State statutes and regulations to insure their soundness and financial responsibility and have the approval of the county and state medical societies under which they operate.

"Your committee is not willing to foster any system of compulsory health insurance. Your committee is convinced that it is a complicated, bureaucratic system which has no place in a democratic state. It would undoubtedly set up a far-reaching tax system with great increase in the cost of government. That it would lend itself to political control and manipulation there is no doubt.

"Your committee recognized the soundness of the principles of Workmen's Compensation laws, and recommends the expansion of such legislation to provide for meeting the costs of illness sustained as a result of employment in industry.

"Your committee repeats its conviction that voluntary indemnity insurance may assist many income groups to finance their sickness costs without subsidy. Further development of group hospitalization and establishment of insurance plans on the indemnity principle to cover the cost of illness will assist in solution of these problems."

In November of 1938 the Council of the Medical Society of the State of New York advised its component Medical Societies that it had taken action as follows:

"Placing the Society on record as in full accord with the recommendations adopted by the Special Session of the House of Delegates of the American Medical Association of September 16, 17, 1938, including that favoring cash indemnity insurance for medical expense.

"Approval of the principle of non-profit cash indemnity medical insurance.

"Instructions to the Legislative Committee to support legislation for amendment of the insurance laws which would permit non-profit cash indemnity medical insurance."

Legislation introduced at the request of the New York State Department of Insurance, and supported by the State Medical Society, known as Article IX-C, effected an enabling act for non-profit medical expense insurance under the Insurance laws of the State of New York.

The 1939 House of Delegates of the Medical Society of the State of New York adopted the following:

*"Tentative Basis and Suggestions for Medical Indemnity Expense Insurance"*

- 1 It must be nonprofit
- 2 It should involve cash indemnity and not medical service
- 3 Patients must have absolute freedom of choice in selecting a duly qualified physician from all those qualified to practice and willing to give service within the locality covered by the operation of the company
4. No third party may be permitted to come between the patient and his physician in any medical relation. The method of providing service must retain a permanent confidential relation between patient and the physician
- 5 The fees should not be below those of the workmen's compensation schedule, but

there must be no interference with higher fees being charged the higher income groups

- 6 All features of medical service must be under the control of the medical profession, such control to be exercised by or under the direction of the Medical Society of the State of New York or one of its component county societies
- 7 The eventual aim of any plan should be to cover medical care in the office, home, and hospital

"The Council further directed its Committee on Public Relations and Economics to study this subject, and it gave its approval to this appointment by the president of a special subcommittee to assist and advise with county medical societies who may wish to effect creation of non-profit organizations for medical expense indemnity insurance under Article IX-C of the amended Insurance Law of the State. Notification of this action was promptly made to each county society. To each county society secretary was mailed a sample pamphlet or prospectus believed to present a practical outline for organization. The Committee realized that lack of suitable statistics based on experience greatly increase the many problems of organization and attempted to provide to interested groups such information as it could obtain. However, it governed its conduct in accordance with the wisdom of Article III of the platform of the American Medical Association, viz, 'The principle that the care of the public health and the provision of medical service to the sick is primarily a local responsibility'.

"Thus did the Medical Society of the State of New York cooperate to place before the people of its state an opportunity to study, evaluate, and possibly buy, Non-profit Medical Expense Indemnity Insurance. It encouraged the formation of local plans sponsored by trusted and well known persons in a community. Some of these organized to form a company prepared to operate in a practical manner this business of prepayment for medical care. Many other groups, and these also represent a cross-section of the local personnel, are still studying and weighing numerous questions pertinent to the desires and necessities of the local public interest.

"The board of trustees operating a plan of medical expense indemnity insurance maintains both lay and professional representation on its membership. Subscribing to this provision it may be pointed out that the interested citizens of a community, especially those desiring to promote the insurance of medical care, may combine with the medical profession to set up a working plan. The fields of insurance, legislation, social work, and industry may be regarded as logical sources for this personnel.

"Such administration—the State Departments of Insurance and Social Welfare, the lay and professional membership in Boards of Trustees—guarantees protection to the subscribing public.

"It should be made clear that this aim of the present plan of medical expense indemnity insurance is to give a certain proportion of our lower income working population the opportunity to save for, or prepay for at low rates, adequate medical care, and especially to provide for the costs of serious, catastrophic illness. In this way

it may do much to eliminate the need for medical relief—but it of course cannot at this stage provide medical care for those who have been indigent to the extent of being unable to pay even a small insurance premium. However, experience with medical expense indemnity insurance may lead to practical systems which allow the indigent patient to secure first-class medical care and which will not remove from him his prerogative of being the employer of his family physician. It appears that all concerned are desirous of not permitting any third party to come between the patient and his physician in relation to purely professional medical care.

"Because of the lack of actuarial data it has been most difficult to determine what rates of insurance premiums should be charged, what services should be included, and which omitted from the insurance contracts. It is apparent from the set-up of present plans that for the duration of each contract the medical profession is prepared to render its services to the full, in some instances accepting payment on a unit ratio basis.

"There has been some reluctance on the part of physicians who were afraid that medical indemnity insurance corporations might not be sufficiently equipped, or informed with sufficient actuarial data, to render the best type of service to the sick. The varying population concentration in the state has made this much more of a problem in some localities than in others. In the main, however, physicians are quite willing to take part in well organized and responsible plans which have the respect of the community. Where plans have been offered for sale in New York State, the response on the part of the public to buy, has, on the whole, been slow. This is an advantage to the managers of a plan, so that they may gain their experience with smaller subscriber numbers, but of course the object of their business bespeaks continued expansion.

"It may be well to coldly analyze this proposition of the reluctance on the part of the public to buy medical expense indemnity insurance. Some of these reasons may be set forth as follows

1. First and foremost, the people of the United States have always been able to secure medical attention from practicing physicians whether they had the money or not. It may be stated that of all the necessities that the human must have, he can secure religious service and medical care easiest and most certain of all. Someone must pay for food, housing, fuel, clothing, and hospitalization, but practically every patient without cash can secure adequate medical care. Therefore it does not appear to the prospective patient that he is so much in need of insurance to pay the cost of medical care.
2. Many people of the low income group feel that they can afford to buy only one, either a hospital, or medical care, insurance contract. Most patients will feel that if they can have their hospital care provided, they will find a physician to take care of them. They fully intend to pay for both, but the experience of the public has been that they may later on pay for medical care while hospital care is often a proposition where payment is demanded a week in advance. This statement is made with no reflection

on hospital methods inasmuch as hospitals, to maintain themselves, must receive revenue. The same may be said of physicians, but the physician has much more personal relationship with the patient than does the hospital.

3. There are many who, having a regular small amount of cash, prefer to buy life insurance with this amount. There is, of course, no argument against proper protection with life insurance. It may be that after all other bills, especially those incidental to the immediate death, are paid, that some part of such fund may be used for payment of medical care. This is again no reflection on the insured, custom has decreed quite well the relative order in which these funds will be used. It takes salesmanship and some persuasion to sell even small amounts of life insurance.
  4. Advertisement by means of the personal agent, radio, and printed word offers strong inducement to the apparently well person to spend his or her money for the thousand and one necessities and luxuries of our everyday life. This competition is quite too strong to allow a universal system of saving money to pay for medical care when no signs or symptoms of illness appear on the horizon. In fact, this competition has gone to the point where the individual has borrowed and is considerably in debt for many of the things he claims to own. It is manifestly quite difficult to lay aside money for medical care when the installment payment is pressing. Those who press for installment payments have a more successful way of achieving their ends than do those who would make the health consideration of the individual their first object.
  5. The American, having been accustomed to rather independently employ his physician, looks somewhat askance at these plans for medical expense indemnity insurance, asking the questions—Am I sure to get the doctor of my choice? Is this a panel system? Are the physicians going to be interested when working on a group basis? Are inexperienced people experimenting with our medical care? When the corporation grows, will it gain some political influence which will lead to political manipulation within and without? The answers to these questions may be easily made when the method of procedure adopted by the New York State Medical Society is understood, but it will take time before the public will have a full confidence in these plans.
  6. When business is good and people generally are working, the worker has little trouble in paying for medical services and will not worry much about this when he and his family are well. When he is out of work, then will arise the difficulty of securing funds to pay for medical insurance premiums.
- "There are those who, with every good intent for the welfare of both the public and the medical profession, have stated that if non-profit medical expense indemnity insurance is not made to work by the medical profession, then we must have compulsory health insurance. In discussing this subject, I would like to call attention to items 1 to 6 stated immediately above.

"Are we to discard our present tried and constantly progressive system of caring for the health of our people for one of experimentation with compulsory health insurance because the present experiment of medical expense indemnity insurance does not immediately or at any time prove successful? If there is a 'blame' for non-functioning of medical expense indemnity insurance, shall it be fastened entirely upon the medical profession? Experienced private corporations have for years studied and put into effect systems designed to pay for the cost of illness and accident. Because they did not succeed in covering the entire fields, did that appear an immediate argument for compulsory health insurance? The medical profession has welcomed the aid of all in the promotion for adequate medical care. I think the objection on the part of some prospective buyers of medical expense indemnity insurance is an eloquent answer to the claim that the public wants compulsory health insurance. If they do not want insurance voluntarily, shall they be made to 'like it' compulsory? Although discussion has brought forth a clearer understanding of the subject, the recent preparations for national defense have emphasized the difficulties of a mass change in our national efforts. We study the efforts of government and industry to prepare for national defense—how difficult it is to quickly manufacture munitions, aeroplanes, and ships, how difficult to assemble and employ the personnel of our industrial plants and our Army and Navy. We hear of 'bottle-necks', and there appears to be a great deal of sharp political jockeying and division that holds up administrative policies, and that possibly weakens the bulwarks of our nation's safety. It is easy to criticize but the informed student soon finds that the difficulties are real and that those in charge of our national affairs are doing the very best they can. Would it not be placing an additional burden upon our State and Nation to insist that we now try to make a general change in the methods of medical care which our people have been accustomed to trust for numerous generations?

"There has been concern among some of our people that our country was unprepared for national defense. It may be this criticism is unjustified, but there has never been any doubt about the medical profession's constant preparedness and readiness to fight disease from one day to another, year in and year out, with the most modern scientific knowledge and equipment known to man.

"The American Medical Association at great cost has made available to our Federal Government most invaluable statistical information and records.

"Along with discussions on the war, there has been critical reference to the large number of disabilities uncovered on the physical examination of draftees. Have not many of these been of a preventive nature and does not every town, city, and state have an appointive or elected body charged with the care of the public health and the prevention of disease? The medical profession has learned to conquer and prevent smallpox, diphtheria, and typhoid fever (as examples of many other diseases), and has it not taken years of argument and protest, and the receiving of abuse on the part of the

leading medical men and regular practitioners to get the authorities of government to take the proper steps to eliminate these diseases? Appropriations have been cut and public health agencies hampered so that it has taken decades and generations instead of a few years to effect achievement. (When commerce demanded a cut across the Isthmus of Panama—that was different.) How long has it taken to arrive at the present stage in the control of syphilis and gonorrhea? (Has not the medical profession cooperated to the full in these ventures for the good of the public health?)

"The germ of tuberculosis and its method of transmission has been known since 1882. Tuberculosis is a disease in which the medical profession for years has advocated and agreed to sanatorium and state control. Tuberculosis is a preventable and an expensive disease and now we are talking about being able to eradicate it in another twenty years, some eighty years after the revealing discoveries of Koch. In the February 1st New York State Journal of Medicine, it is stated that the World War is twenty-two years behind us, yet the Federal Government pays in compensation for tuberculosis that originated in service about \$3,000,000 each month at a total cost of some \$959,000,000. In 1939 the total number of World War men compensated for tuberculosis was 55,634, including 1,947 deaths for that year. In the same publication the statement is made that in order to save \$135,000 in x-ray expenses, it is charged that the Government has sent 300,000 National Guardsmen to camp without adequate chest examinations and has thereby assumed a risk of at least \$30,000,000 in future liabilities. It states that service disability claims resulting from tuberculosis among World War veterans have cost the United States about \$10,000 each during the last twenty years. Three thousand cases of tuberculosis among the men now in camp could therefore be expected to cost at least \$30,000,000 during the next twenty years.

"For a long time the medical profession has been in complete accord with the policy of State administration of hospitals for treatment of the insane. Some of our best medical men have been attracted to this work and the annual financial outlay for hospitalization is enormous. And yet we have not solved the problem at all. Is it not a grave question whether we are gaining or losing in our struggle with mental disorder and disease?

"Those of us who have an intimate contact with public health work and who have a regard for high professional attainment most bitterly resent the throttling of the public health by politically minded bodies. Every little health officer in every little town has his mind full of incidents of this nature.

"When the elimination of a costly disease has been brought about, there is a certain amount of justifiable boasting of the dollars and cents that finally is thus saved—but the misery, suffering and loss of life incurred during the years of procrastination and delay—there is little to atone for that.

"We have indicated tuberculosis as an example of a problem for government to try its hand at, along with many other health problems capable of solution, before attempting compulsory health insurance. We do not accept the answer

that the panel class or contract physician in his regular routine of making calls to alleviate symptoms is the one that will discover early tuberculosis. But I do believe that an educated, informed receptive population (public health authority and medical society information)—receiving modern competitive private medical diagnosis and care, with local, state, and Federal aid furnishing adequate policing powers, laboratory, sanatorium and hospital facilities, all administered on a progressive scientific basis and unhampered by political manipulation—can be freed from the ravages of a disease we ought to have conquered long ago.

"Much of our public education in health now goes over the radio. Yet Government is still actively concerned in trying to restrict for the public protection some of the statements originating from commercially-minded sources. Would not daily or regular information from an accredited public health source do more to keep people well and thus eventually help business? Is there not too much propaganda directed at the gullibility of the poor sick person? Does the medical profession object to this? They do. Whose duty is it to eliminate these hazards to our welfare?"

"These comments are not made in the sense of criticism but with the idea of pointing out the difficulties in the subject of practical medical care and emphatically with the idea of calling the medical profession and organized medicine to aid in solving these problems.

"The struggle of the human against disease and advancing age is an old, old story—it is destined to be a continuous one—illuminated here and there with brilliant victories.

"It may be that medical expense indemnity insurance, if given proper time and opportunity, will do much for our happiness and welfare. The subject is as yet comparatively new and it deals with important principles and problems. It will take a few years at least to give it a fair trial. The attitude of the State Society has been that it would be most unfortunate to attempt to force it upon communities and organizations not yet prepared for it. At its best, it cannot conquer poverty nor produce abundance. In the meantime, as heretofore, the medical profession will stand by to give every economic strata of our population the best and most modern medical care there is in the world today."

## PART VI

### Medical Relief

As provided at your last meeting, a Subcommittee of the Council Committee on Public Relations and Economics was set up and charged with the single duty of negotiating an agreement with the State Department of Social Welfare on a plan of medical welfare service embodying the declared policies of this Society. This Subcommittee on Medical Relief (E. Christopher Wood, M.D., White Plains, *Chairman*, Carlton E. Wertz, M.D., Buffalo, F. Leslie Sullivan, M.D., Scotia) was able to start right out on conference work with the representatives of the State Department of Social Welfare. A number of such meetings, in which Dr. Lawrence and Dr. Irving took part, culminated in the following announcement, which was published in the March 15, 1941, issue of the JOURNAL.

## Joint Statement

*From the New York State Department of Social Welfare and the Medical Society of the State of New York*

ON the following pages the outline of "Principles and Discussion" represents the position taken by the State Department of Social Welfare (under the Public Welfare Law) in regard to the various medical welfare policies adopted by the House of Delegates of the Medical Society of the State of New York during the past several years. Also included is an outline of Basic Principles of a New Medical Plan, approved by the State Department of Social Welfare, which is now being put into effect by the State Department in various localities. This is the Medical Plan referred to in the discussion below.

The reader is requested to study thoroughly all this material and preserve these pages for future reference.

For the purpose of maintaining orderly, practical, and logical thinking on the subject of medical welfare policies, the following points must be kept in mind. Under the Public Welfare Law, local welfare officials are empowered to provide medical care on a salary basis or on a fee-for-service basis, consequently the indigent patient may not have or may have the right of free choice of physician according to the procedure adopted in any given locality. In addition, if they are to receive reimbursement from the state, their local welfare departments must be operated under the Rules and Regulations promulgated by the State Department of Social Welfare. At present there is no relation between the Workmen's Compensation panel and the care of indigent patients except in a few localities where such a relation has been mutually agreed upon on a trial basis. Any platform adopted by the State Medical Society, or by local medical groups, has no force whatever in effecting the conduct of medical relief work unless agreement can be reached with the state and local departments of welfare concerning this platform. Such agreements, if reached, are essentially mutual understandings and in no sense abrogate any portion of the Public Welfare Law. It should be noted further that the local welfare official is legally responsible, to his community and to the state, for the entire conduct of his department and he can neither delegate nor share this responsibility. He can seek and accept advice or suggestions concerning medical problems and procedures, but in the final analysis re-

sponsibility for all decisions rests solely on him

In studying the "Principles and Discussion" it will be noted that there is already a considerable amount of agreement on Principles 1, 2, 3, 4, and 7, some of the details of which have to be further worked out from the standpoint of statewide policies. The following portions of the discussion of these principles might well be emphasized. The State Department of Social Welfare agrees that there are advantages in the establishment of a medical advisory committee in each public welfare district and agrees to advocate the use of these committees and to assist in a general determination of their functions. Under the Public Welfare Law, these committees can advise and suggest, and can recommend policies for supervision and administration, but the responsibility for all acts and decisions must remain—and we feel should remain—in the hands of the local welfare official. State reimbursement on a local fee schedule is conditioned upon the State Department's approval of this schedule as being reasonable for the particular community rather than on the basis of a statewide fee schedule. Abolition of the system wherein medical questions are submitted to the State Department for decision is brought about automatically through the introduction of the new medical plan and the "prior authorization" system is transferred to the local agency under local professional control. Considerable study is now being given to the question of medicines and drugs—a few localities having reached a fairly satisfactory solution of this problem—and it can be expected that with local assistance much of the difficulty and criticism will be eventually eliminated. The State Department points out that under the law it cannot guarantee free choice of physician but draws attention to the fact that while in some localities it has been long-standing practice to employ salaried doctors, introduction of the new medical plan has had a tendency to increase consideration of the use of the fee-for-service basis, since provision is made for local medical controls.

Although on the surface there appears to be a wide divergence of opinion concerning Principles 5 and 6, it can be said that the State Department now has a fairly accurate conception of the medical profession's viewpoint regarding these principles. It can be said further that the State Department is not unsympathetic toward these principles but feels that much additional thought and

study are necessary, especially with reference to local conditions, before a common ground can be reached. It is entirely possible that, wherever local medical advisory committees really work and function, salaried practice and the overuse of clinics may be found to be increasingly less desirable medically, socially, and economically. This is not to say that the solution of these problems will be merely a matter of simple evolution but rather to emphasize that their solution directly depends upon the amount of thought and consideration given them.

As enumerated below, there are several methods of providing physicians' services. These methods, their costs, and the results obtained vary with the locality, to a considerable extent dependent upon the judgment and experience of the local welfare official and upon the local conditions and need with which he is confronted. However, nowhere in New York State is there a formal, functioning mechanism which integrates and correlates all the services which are provided in a community at public expense. Only by having the complete picture, especially regarding total individual costs, can the appropriating bodies, the welfare officials, and the medical care professions cooperate to the end that the medical needs of the individual and the community are met efficiently as well as economically.

To provide the services of a physician, one or more of the following methods are commonly used

- 1 Employment of physicians on a fee-for-service basis, either giving the patient free choice of physician or limiting the choice to a selected panel of physicians
- 2 Use of public or private clinics
- 3 Employment of salaried staff physicians to treat patients in their offices and in the patient's home, with specialists' services on a fee-for-service basis
- 4 Employment of salaried staff physicians to treat patients in the patient's home, or in a clinic
- 5 Employment of salaried physicians by a city department of health for services in the home or in clinics, with or without supplementation of this service by employment of general physicians and specialists on a fee-for-service basis when needed
- 6 By any combination of the above methods

Concerning the appointment of a physician

as a medical director or medical consultant and concerning the formation of local medical advisory committees, the State Department of Social Welfare makes the following recommendations to local welfare officials

"The attention of the local public welfare official is called to the value of securing the full cooperation of his county medical society in the development of an approved local medical program and in the selection of a competent physician to act as Medical Director or Medical Consultant on his staff. The State Department recommends that . . . he request the medical society covering his public welfare district to submit a list of physicians recommended by the society as suitable for such appointment and meeting the requirements established by the State Board of Social Welfare, or request the medical society to comment upon the qualifications and professional standing of a licensed physician selected by him as a candidate for appointment as Medical Director or Medical Consultant. Attention is called to the value of an active professional advisory committee in providing the local public welfare official with professional advice in the development and revision of the policies included in the approved local medical program, in the arbitration and discipline of professional problems and the operation of survey boards to review and plan proper medical care for persons suffering from prolonged or disabling illnesses or presenting special or unusual medical needs. The medical advisory committee should be appointed from a list nominated for the purpose by the county medical society. Where deemed advisable this committee may be expanded in the same way to include representatives of other professions, institutions, and laymen."

In conclusion, it should again be emphasized that under the law, the welfare patient is not guaranteed the right to choose his own physician, and the physician is not guaranteed the right to treat his own patient with a commitment of payment for his services. But if the physicians of a given locality can agree among themselves to formulate and to participate seriously in a plan adapted to the medical needs and medical and economic resources of their community, the Public Welfare Law and the regulations of the State Department of Social Welfare make it possible for the indigent patient to choose his own physician and the physician to treat his own patients with payment for his services supplied from public funds. Although the local public

welfare official is responsible for providing necessary medical care for indigent persons, the determination as to the medical needs is now by law "made with the advice of a physician."

JACKSON DAVIS, M D

*Chief Medical Officer,*  
State Department of Social Welfare

CHRISTOPHER WOOD, M D

*Chairman,*  
Subcommittee on Medical Relief  
Medical Society of the State of New York

## Local Medical Care Plan

### BASIC POLICIES

1 Recognition by public officials, physicians, hospital administrators, and all other professional personnel, of the Public Welfare Commissioner's legal responsibility and authority, within existing appropriations, to provide medical care for all persons, under its care, and for such persons otherwise able to maintain themselves, who are unable to secure necessary medical care

2 Acceptance of principle that the local Medical Program of the Department of Public Welfare should be supplementary to, and involve proper, full utilization of all existing medical facilities, federal and state, as well as local tax-supported and voluntary institutions

3 The establishment of a central unit, with administrative responsibility for the authorization and issuance of medical care, and directed by a full-time or part-time physician, who, in the discretion of public welfare official, may be supported by a Medical Advisory Committee, follows recognition of the fact that sound medical program administration requires.

- a Professional medical judgment and controls such as can be given only by a physician.
- b Simplified and smoothly operating procedures to effect the referral of patients to physicians for treatment
- c A clearly defined plan for keeping the social service staff informed of health, medical, and medical social treatment needs of their clients
- d An accounting system

4. Recognition by public welfare officials and physicians, nurses, hospitals, druggists, and other professional personnel participating in the medical care program, of the value and essential need of detailed written agreements wherever practicable, stating clearly the responsibilities to be undertaken by each, as well as procedures and financial payments involved.

5 Acceptance of responsibility to establish and maintain continuous medical records showing

- a Total treatment costs according to type of service, such as physician's treatment, nursing care, drugs, hospital care, appliances, etc
- b Treatment costs of individual patients
- c Diagnostic and treatment records of each individual patient
- d Administrative costs

Without such recording, no sound analysis of the value and cost of the total medical program can be made, nor can the total medical needs of the individual patients be reviewed and adequately or economically met

6 Acceptance of responsibility for joint planning and periodic case conference between the Medical Unit and the Social Service staff for utilization of physicians to determine medical need and social service to determine financial need for those patients applying to the Public Welfare Department for medical care only

7 Acceptance by the Public Welfare Official of responsibility for preparation of written statement of all medical policies and procedures, contracts, price schedules, etc., copies of which should be available to all participating professional personnel or vendors, to the social service staff, and to all cooperating agencies or institutions in any way involved in the local medical program

8 Whenever feasible, the same plan for providing medical care shall be used for all categories of public assistance in order to obviate confusion to the recipient and medical attendant, and to aid in the simplification of administrative and accounting procedures

## Principles and Discussion

### 1 THE MEDICAL ASPECTS OF MEDICAL RELIEF SHOULD BE SUPERVISED BY THE MEDICAL PROFESSION

"Medical aspects" include

Limitation of scope of practice for individual doctors

Decision as to when specialist or consultant is necessary

Decision as to use of special clinics

Evaluation of services in terms of fees and charges

Decision as to whether medical care is needed, or when it should cease

Decision as to drugs and appliances

"Supervision" defined

Above matters should be under effective control of the medical profession by

1 Medical society committees

2 Full-time medical supervisors, nominated by or approved by medical societies

3 County and State medical advisory boards

Actual ruling should be made by local, county or state Welfare Commissioner, but no ruling on a medical question should be made in absence of a definite recommendation by

the medical board or supervising physician.

## Discussion

### "Medical Aspects"

It was agreed that under the new medical plan the determinations as to limitation of scope of practice and use of special clinics should be made jointly by the local welfare agency and the local professional committee. It was agreed that the other decisions included in "Medical Aspects" would be made by the medical director or consultant of the local agency with or without the advice of a professional committee

### "Supervision"

It was agreed that in taking cognizance of the responsibilities of a public welfare commissioner as outlined in the Public Welfare Law, the departmental medical program must be "supervised" by the commissioner and his medical director. A local medical committee should not have any supervisory or administrative responsibility for the program. It was agreed, however, that an "advisory medical committee" should be established in each public welfare district and that this committee should act in an advisory capacity only. It was agreed also that no ruling on a medical question should be made by a local welfare commissioner in the absence of a definite recommendation by the medical director or the medical advisory committee. The State Department of Social Welfare agrees further to advocate the use of these committees, and the exact manner in which they should function will be outlined in a document to be prepared jointly by the Department and the State Medical Society

### 2 ALL PHYSICIANS SHOULD BE ENCOURAGED TO PARTICIPATE IN THE SERVICE

By abolition of statewide fee schedule and substitution of local schedules, established by mutual consent of local county medical societies and local welfare officers, within limits prescribed by State Department of Social Welfare

By more liberal, but definite, provision for engagement of specialists, and consultants, when needed, in the opinion of the attending physician.

By reduction of red tape and reporting and billing mechanisms to the minimum

By complete elimination of lay interference or dictation in medical matters

## Discussion

Under the new medical plan, local fee schedules are prepared by the Welfare Commissioner with the aid and cooperation of his medical director and professional advisory committee. State reimbursement is conditioned upon the State Department's approval of a local fee schedule as being reasonable for a particular community rather than on the basis of a statewide fee schedule

The exact manner and circumstances, in which specialists and consultants are to be engaged, are incorporated as part of the local medical plan

As this plan is developed jointly by the local department, the State Department and the local medical groups, it is to be expected that in each instance this policy can be handled to the satisfaction of all.

Reduction of red tape has already been accomplished through the introduction of a new form which abolishes the former system of a separate bill for each patient and now permits billing on one form for all patients treated in one month.

It was agreed that the State Department's requirement, that a medical director or consultant be engaged wherever the plan is put in operation, would reduce lay interference in "medical determination" to a minimum. It was pointed out, however, that the welfare commissioner is a layman who has sworn responsibilities which he may not renounce—including the authorization of welfare commitments—and that, while it is agreed that in medical matters he should have the advice and guidance of a medical director and/or committee of professional men medically competent, the responsibilities for decision must remain squarely on the shoulders of the commissioner and may in no sense be eliminated or considered as "lay interference."

### 3. UTMOST DECENTRALIZATION OF CONTROL IN MEDICAL MATTERS

Local supervising physicians or society boards should be able to rule on use of special drugs, use of consultants and specialists or any other special treatment, without reference of these questions to State Department of Social Welfare.

Local welfare officers should have full authority to order special drugs and authorize special modes of therapy, with assurance of reimbursement to themselves, if approved by local supervising physician or society board.

#### Discussion

Abolition of the system wherein medical questions are submitted to the State Department for decision is brought about automatically through introduction of the medical plan. It was pointed out that wherever the plan is installed and approved by the State Department the "prior authorization" system is transferred to the local agency under local professional control. Under the new system professional members of the State Department staff will periodically examine the records of local agencies to determine whether or not the agency is adhering to the conditions established by themselves in their own plan.

As to drugs the State Department is not as yet ready to change its regulations, especially concerning the use of proprietary drugs. The Department feels that any change in this connection can only be made after a sufficient number of medical plans have been submitted, therein indicating the opinions of the local welfare agencies and local medical groups as to what constitutes a reasonable policy in connection with special drugs and special modes of therapy. It is not likely that this determination can be made for at least another six months.

### 4. FREE CHOICE OF PHYSICIAN SHOULD BE GUARANTEED SUBJECT TO PROTECTIVE LIMITATIONS

As in Workmen's Compensation practice, panels of participating physicians should be established. Each physician will be bound by the scope of practice for which he has applied, subject to the approval of local authorizing boards.

Any client needing care will go to, or call, his own physician who will care for the patient under the usual conditions of private practice, except that (1) If the patient suffers from a condition outside the physician's scope of practice, he will refer the patient elsewhere, and (2) If the patient fails to qualify for medical aid through the Welfare Office, the physician will continue to treat the patient as a private patient.

#### Discussion

It was pointed out by the Department that in the majority of communities a system of free choice of physician on a fee-for-service basis is used by the local welfare agency. Wherever this system is used, each of the articles of this principle should be met.

However, the Department pointed out that it has neither the power under the Public Welfare Law, nor does its experience to date indicate the need, to mandate communities to the extent that they *must* use the fee-for-service system rather than salary or contract. It is the major responsibility of the Department to see that the scope of the program provides adequate service, of high quality at reasonable cost to the taxpayers. Wherever the local program fails to meet these requirements, the Department will insist that necessary changes be made regardless of whether the fee or salary basis is used. It is felt that for the Department to *mandate* one way or the other would introduce "State Medicine" to the fullest extent. It was explained that while it has been a long-standing practice in some localities to use salaried doctors, introduction of the new medical plan has had a tendency to swing communities over to the fee-for-service basis.

### 5. CONTRACT PRACTICE FOR MEDICAL RELIEF SHOULD BE DISAPPROVED

Contract practice is disapproved because

1 From the standpoint of *public policy* it establishes a political control over medical practice.

Establishes a type of service radically different and divorced from the private service available to the general population.

Adulterates the direct legal liability of doctor to patient, the main protection of the individual against incompetence and negligence.

Promotes pauperization of the people by its natural tendency to perpetuate political jobs and extend "free" services.

2 *Medical Policy*

Choice of physician, if properly con-

trolled for protection of patient, has definite therapeutic value

Most competent physicians will not participate in contract plan.

Tendency is to give as little care as possible because of lack of usual incentives

Inevitable overhospitalization under contract plan makes economy an illusion

Cheapens medical service, viewing it as a commodity

Gives free rein to malingerers, and produces growing demand for attention to trivial conditions, at the expense of adequate attention to serious conditions

### 3 *Ethical Policy*

Directly contrary to and incompatible with the primary ethical principles that have maintained the professional status of the physician, improved the effectiveness of his service, and protected the patient against charlatanism, incompetence, and negligence

Participation by a member of the profession compels him to violate some of these ethical provisions

### Discussion

The Department cannot agree to this principle for the reasons stated under Principle No 4. It is quite obvious that if the Department finds the quality of care in a local community effected by and to the extent enumerated in Items 1, 2, and 3, under Principle No 5 and these conditions traceable to the use of salary or contract doctors, the Department would in its normal supervisory role insist upon a change in the system

## 6 CLINICS SHOULD NOT BE EXPLOITED TO AVOID PAYMENT OF FEES FOR SERVICE THEY SHOULD BE USED WHEN MEDICALLY DESIRABLE

Clinics are largely staffed by private physicians receiving no remuneration for clinic services

When ambulatory cases are sent to hospital clinics for care that could equally well, or better, be given by a private general practitioner in his office,

- (1) The clinic is unnecessarily burdened, cutting down the time available for attention to each case
- (2) The clinic physician is unnecessarily exploited for service to public charges
- (3) The patient is deprived of the right to be attended by his own physician
- (4) The clinic physician or his colleague in the community is deprived of a nominal office fee which would help him pay his taxes

General cases should be sent to general practitioners in the community, especially where the patient expresses preference for a certain physician.

There is no need for a general medical clinic in the relief program

Special clinics should be used wherever a

private physician wishes to refer a patient for diagnostic examination or specialized treatment

The hospital outpatient department should be used as a diagnostic center and treatment auxiliary, by the private physicians, not as a catch-all for every sort of case

### Discussion

The program of the State Department of Social Welfare supplements and does not duplicate or substitute for existing facilities. The establishment, expansion, and scope of service of local clinics are determined solely by local government officials. The Department feels that where such services infringe upon or exploit the local medical group, this is a matter for arbitration between local officials and professional groups, and not subject to state interference

With the establishment of the local medical plan, the Department has no choice but to insist that existing clinics and other medical resources be used to the fullest, *reasonable* extent. The department does not, however, insist upon the use of such resources where they fail to meet the purpose for which they were established. In determining jointly with the local welfare agency the extent to which clinics and other resources shall be used, the Department takes into consideration the quality of service, the scope of service, the physical facilities, and the ability of the clinic to handle qualitatively, as well as quantitatively, the number of cases to be referred by the local welfare agency

## 7 PROVISIONS SHOULD BE MADE TO ENABLE NEEDED MEDICAL CARE TO BE FURNISHED FOR INDIGENT AND NEAR INDIGENT FAMILIES NOT OTHERWISE ELIGIBLE FOR RELIEF

"Medical indigency" should be defined

### Discussion

Provision for near indigent families is made through the Public Welfare Law, Section No 85, Responsibility for Providing Medical Care. "The public welfare district shall be responsible for providing necessary medical care for all persons under its care, and for such persons, otherwise able to maintain themselves, who are unable to secure necessary medical care." L 1940, Chapter 682 modified this section by adding, "The determination as to medical care necessary for any person shall be made with the advice of a physician."

It was pointed out that in actual practice and in conformity with this section of the law, local welfare agencies make available to persons not on public assistance such medical care as is required. The medical director and medical advisory committee under the new plan can be of great assistance to the commissioner of public welfare in the interpretation of the medical needs of persons not on public assistance. Under the procedure of the State Department, reimbursement on all such medical care is granted by the department

# PART VII

## Legislation

The Committee, charged with the duty of study of legislation and putting forth the positions taken by the Society, consists of

John L. Bauer, M.D., *Chairman*

Walter W. Mott, M.D.

Leo F. Simpson, M.D.

Brooklyn

White Plains

Rochester

The Committee has made the following preliminary report up to March 15, 1941. A supplementary report will be ready for the House on April 28, 1941.

"Unquestionably the work of the State and County Legislative Committees is year-round. In order to accomplish the best results, each county committee must be constantly alert, awake to each suggestion on matters which concern medicine, realizing fully that these suggestions create discussions and lead to bills which will need our support or opposition. If we have our ears to the ground, we may be able to advise early and influence the thought of and knowledge on a subject, so that our legislators may be led to appreciate the true significance of that subject. If we take a vacation, just because the legislators are not in session, they will naturally be accumulating facts as they find them and become wrongly impressed with the value of an issue. They are more or less on the job the year round, and while they are not in session, have more time to make up their minds on public questions. On the other hand, when the Legislature is in session, and the bills are being rapidly turned out, it is obviously our duty to contact them frequently, lest the questions are such as they have not considered during the rest of the year—and they have not the time to become informed, as much as they would like to be informed. The legislators have a right to expect us to support them as they are willing to support us—and that means that we should loyally place ourselves at their disposal, so that they may readily know what the arguments for or against a question vital to medicine and public health, should be.

"Therefore, the county medical societies which have active year-round legislative committees are rendering the best service, not only to the cause of their patients but also to the profession.

"The legislator comes to look upon the doctor as his friend—to lean upon him, expecting to be properly informed on public health and other medical matters. The legislator becomes thoroughly acquainted with the value of the Medical Practice Act—is proud of its high rating and will hesitate to tie up with culms which have no scientific substantiation. How could Chiropractic get a foothold, if the legislators knew that no reputable institution of higher learning has ever endorsed the teaching of chiropractic, that the training of the chiropractic graduate is far inferior to that of physicians, that recognition of chiropractic would lower the high standards (even debase them) which govern the practice of medicine, protecting, shielding and benefiting the people, our patients?

"The Workmen's Compensation Law intended to place the workman in a more or less private bed, to keep him out of public hospitals—we recognize that fact and so oppose the McAffrey bill. We approve the Crews bill—we realize that

the young people who must needs work and go to night school deserve the same privileges of physical examinations that the others receive.

"We all are aware of the political possibilities of the Wagner bill—a provision for compulsory health insurance [compulsory sickness insurance is meant]. We know that no sane man believes that the cost of the operation of this bill can be provided, at least, not at present. We know that it is wrong in principle, it would encourage malingering and neuroses, it would tax severely industry and labor, increasing the cost of living etc. Naturally, we oppose such legislation.

"On request of the Council, we are opposing a bill to give podiatrists authority to treat compensation cases. The Council also instructed that opposition to the Schwert bill should be registered with our Congressmen, a bill which exaggerates the value of development of the muscles—and no thought for the requirement and physical ability of the individual. Wherefore physical examinations! Let the children go to camps. Can you picture all this without proper physical examinations? Can you imagine Federal subsidies without Federal approval of local plans. State Medicine! Dr. Lawrence issued a special bulletin on federal legislative matters and wrote to our Congressmen on the committee to consider this bill, and called upon the county chairmen of the counties represented by these Congressmen, to write similar letters.

"But why continue? The Council, the various legislative committees, are well informed through the bulletins sent out by our Executive Officer and by our own County Committee reports and County Bulletins, of all of the various bills and the actions taken.

"Seven regular, and five special bulletins have been sent out thus far. The mailing list numbers nearly 600. The return sheet for comment continued to win favor and more returns have been received. Your opinions are invaluable.

"Dr. Lawrence reports 48 Senate and 59 Assembly bills of interest to us so far. To date four have passed both houses. The Chiropractic bills have brought out some interesting information. It is rather controversial, "they did, they didn't." Perhaps one can positively say that the Regents Committee went on record as unanimously disapproving these bills—but they apparently hesitated to declare that in 46 years, scientists have failed to find any scientific value in chiropractic—yet they know positively that such is the truth, and that such a public statement should be forthcoming from them.

"The Annual Conference of County Legislative chairmen and others proved very successful. It was held in Albany on February 14, 1941, the attendance was greater than ever before and the *esprit de corps* was delightful. Thirty-eight county societies were represented. Assemblyman Lomis, chairman of the Assembly Public Health Committee and Colonel Gaus, a member of the Adjutant General's staff, were present at the luncheon. Also we welcomed a few ladies, including Mrs. Vander Veer, chairman of the Legislative Committee of the Woman's Auxiliary to the Medical Society of the State of New York. The success of the meeting was really a well-deserved recognition of the services of our Executive Officer, he should feel highly complimented.

It was also an expression of the interest the participants are taking in their legislative work. "Thanks to our officers, Council and Committee Chairmen for timely suggestions and support should now be made. The work must go on with increased vigor."

### Malpractice Defense and Insurance

The Committee on Malpractice Defense and Insurance

Clarence G. Bandler, M D, *Chairman*

Murray M. Gardner, M D New York

Andrew Sloan, M D Watertown

Peter Irving, M D, ex-officio Utica

George W. Kosmak, M D, ex-officio New York

submitted the following report, which the Council approved

"Owing to the fact that this report was filed more than a month earlier than in previous years, due to the annual meeting being held in April, it has not been possible to get as complete an estimate of the cost of operating the Group Malpractice Insurance Plan for the five years ending December 31, 1940, as heretofore. However, the new accounting system, put into effect five years ago, has made it possible to bring all basic data into agreement much faster than under the old system and a preliminary forecast has been obtained from a study of that material. This indicates that there has been no diminution in the number of suits and claims brought against members of the Society and that some increase occurred in the cost of disposing of them. However, this has been partially offset by some reduction in the estimated cost of disposing of the outstanding suits and claims, so it is believed that the net cost of operating the Plan at the end of this accounting period will prove to be substantially the same as at the end of 1939.

"The cost of the minimum or base policy continues to be somewhat in excess of the rate charged and if subsequent experience confirms that cost, recognition of it may have to be made by increasing the base rate. At the time this report was written, however, it did not appear likely that such an increase would have to be made this year. On the other hand, the preliminary estimates indicate that the cost of disposing of suits and claims in excess of \$5,000 has fallen below the income produced by the present schedule of rates for higher limits. High cost suits and claims do not occur with any regularity, nor can their cost be predicted with the same accuracy as those of \$5,000 or less. For that reason, it is never satisfactory or entirely safe to undertake a mathematical prediction of such costs. Nevertheless, the estimates on hand at this time indicate that it may be possible to make some reduction in the schedule of rates for higher limits this year and, if that proves to be the case, new schedules will be published at once.

"As in previous years, it is noted that loose, unwarranted and frequently thoughtless criticism by fellow members of their confreres continues to be the largest single inspiration for malpractice actions. This is a phase of medical practice which can and should be vigorously attacked in every community. It offers the most

effective and perhaps the only way in which unfounded and unjust claims can be discouraged. Medical men are called upon to advise their patients on many matters affecting their welfare. Where that welfare or well-being involves poor results of treatments by other physicians, members should use the greatest care in determining whether those results flowed from negligence or mere errors in judgment or the inevitable complications of life, disease or injury. It is precisely at that moment that the doctor can perform the greatest service to his patient and to practitioners of medicine as a whole by honest and accurate advice to his patient, making sure that he has all of the facts which entered into and affected the previous treatments.

"During the past year, thirty-five suits or claims for malpractice were brought against members who were not insured. In each case, the cost of disposing of those actions, except legal fees and expenses, must be paid for out of the pockets of the individuals concerned. For some, that may not be difficult while with others it may be ruinous. This is a yearly occurrence which can be forecast as to numbers, but as it cannot be predicted as to individuals, it would appear to be poor economy to practice medicine in New York State without insurance when the cost of \$5,000 protection amounts to only \$28 annually. It is recommended that the Council bring this matter to the special attention of all members of the Society.

"Although the number of members who left the Group Plan during the year for various reasons was augmented by members going into military service, the net number of members insured was increased by about 300.

"A word of caution should be sounded for doctors going into the Army and who have arranged with an associate to carry on their practice during their absence and who assume that under such arrangement they would have no malpractice liability to their patients.

"It seems most likely that the doctor left in charge of the practice would be held as the agent of the member whose practice he is taking care of and any action on account of the acts of the agent would probably be brought against both doctors. It is for this reason, and as a factor of security, that it is recommended that any doctor who has been or may be called for military activity retain his Society's malpractice insurance.

"Although Colonel Wanvig, the Society's insurance representative, has been called into active service as the War Department's representative at the national headquarters of Selective Service in Washington, he has kept in almost daily touch with the details of operations of the Group Plan which has been carried forward under the competent care of Mr. Gordon P. Casper and Miss Mary G. Flood who have been associated with the Group Plan since it was organized in 1921.

"The stability of the Yorkshire Indemnity Company as a sound and dependable American company, in no wise affected by the outcome of the war in Europe, has been established to the satisfaction of the Committee and to the Society as a whole. Since this matter has been reported fully to the Society during the year, it is not necessary to repeat it here. During the five years in which the Group Plan has been under

written by the Yorkshire Indemnity Company, the Officers of that Company have a keen understanding and appreciation of the Society's problems and have given their fullest cooperation and assistance at all times."

## PART VIII

### Medical Preparedness

Immediately following the action of the House of Delegates of the American Medical Association in setting up a national committee, the Council set up a similar committee for New York State. This Committee has functioned since then and consists of the following personnel

Samuel J. Kopetzky, M.D.,	Chairman	New York
Louis H. Bauer, M.D.		Hempstead
Edward T. Wentworth, M.D.		Rochester

There follows the annual report of this new Committee

"After a conference with the secretaries of the County Societies, held in Albany on July 29, analogous and coordinating County Society committees were established throughout the state, and these committees have functioned very satisfactorily in liaison with the State Committee ever since.

"The function of the State Society Committee divided itself naturally into three categories

1. Matters concerned with the Medical Preparedness Committee of the American Medical Association.
2. Matters concerned with the County Societies' committees
3. Assistance to Government agencies

"*Relations with the American Medical Association Medical Preparedness Committee*—All questions involving the development of policy have been referred to the American Medical Association Committee on Medical Preparedness. In most instances, the cooperation has been prompt and sympathetic. The questions which were raised here were also raised in other states. Among these questions, the status of native-born citizens, graduates of foreign medical schools, took up a considerable amount of the correspondence. These men, Americans by birth, graduates of foreign medical schools but licensed to practice here, in some instances were desirous of serving this country in its armed forces, and in other instances were inducted into the armed forces of the country. Their status remains unclarified. The Committee has pointed out that whatever defects their original diplomas had, these deficiencies might be considered as corrected by subsequent internship or residency in a Grade 'A' approved American hospital and has so advised the Army and other authorities who have asked our opinion in the matter. A decision has not yet been made, and the status of these men is still unclarified.

"The question becomes acute when the doctor in this category comes under the provisions of the Selective Service Law and is inducted into the Army. Some of these men have written letters about the condition in which they find themselves, and representations have been made to the military authorities concerned, in an effort to improve their lot, pending decisions from Washington.

"Regarding American doctors—graduates of American schools, who come under the provisions of the Selective Service and who are inducted into the Army, under informative letters published by the Selective Service Administration in Washington it has been learned that these men will receive commissions as medical officers. It seems that the amount of time they spend between induction and commission is indefinite and in many instances—in our opinion—too long. Representations have been made to the military authorities, to the American Medical Association committee and to the Surgeon General's office in an effort to clarify this situation.

"It has been the announced policy of the Selective Service Administration that medical students, interns and residents who are completing their education, shall receive deferment until the termination of their medical education, with the idea of not interrupting the even flow of educated, qualified doctors into the community. In most instances, in this state, very few complaints have been received regarding the action taken by the local boards in regard to this category of registrant. Nevertheless, since the determination is within the jurisdiction of the local boards, in a few instances these local boards have, to our knowledge, not fulfilled the policy laid down by the National Selective Service Administration. In every instance where that has come to notice, efforts have been made to place the facts before the Appeals Board so that such decisions might be rectified and changes made in accordance with the policy of the Selective Service Administration.

"*Relations with the County Society Committees*—Our liaison with the County Societies has been of threefold purpose: first, to facilitate the preparation and completion of the American Medical Association questionnaire, urging doctors to forward them to the American Medical Association headquarters; second, to procure the completion of the State Society questionnaires and send duplicates to the State Society headquarters properly annotated by the County Society officers; and third, to provide the personnel to man the local board examining posts, and the personnel of the Medical Advisory Boards of the New York State Selective Service administrations—that for the New York City area, and the one for the rest of the state.

"In every instance, it is a pleasure to report that fine cooperation has been established between the County Society committees and our own. Rapid and prompt responses have been received either by telephone, or sometimes by telegraph. The Society has had commendations from the New York State officials upon this activity. We have asked the County Society Medical Preparedness Committees to develop the home defense activities within their counties and assume the initiative in them, and this work is progressing.

"*Liaison with Government Agencies*—The military authorities of the Second Corps Area and the Second Military Area have been in constant communication with the Medical Society of the State of New York in regard to personnel. Reserve Officers who have been called to duty and whose departure would leave their communities uncovered have brought their individual situations to our attention. These matters were taken

up with the military authorities, and in most instances the man was relieved of duty and returned to his civilian work

"The qualification of medical men to serve on induction boards has also been carried out with the assistance of our New York office. In every instance, the recommendations have come from the County Societies and have been checked by us and forwarded to the military authorities. We have had no information as to who has been appointed, or how many. We forward the information and the Army does the rest

"Regarding the commissioning of physicians—information came some time ago that the Army would not commission men except after induction under the Selective Service law. On the other hand, the Navy is commissioning officers in the medical corps without having them go through this process

"The Committee wishes to state that it cannot but feel a source of great pride in the fine contribution that some thousands of men of our profession are making toward the national defense program. Of course, there have been misunderstandings, and there have been some complaints—but on the whole the service rendered by the profession has been well received and is fully appreciated

"In liaison with Government agencies, this Committee took an active part in the meetings of the Commission to formulate a Long Range Health Program of the State of New York. We have met with them at each meeting held, and are making our contribution toward their activity

"*General Remarks*—The provisions by the County Societies for taking care of the practice of men who are absent from their private practice because of military service is causing us considerable concern. We have urged, at various meetings, that the principle embodied in the Bauer Plan be made the basis upon which the County Society take action. It is our considered opinion that no plan can be devised which would be totally satisfactory. It is a matter of honor between the absentee and the man who substitutes for him. We have had a decision from the Internal Revenue Department on the matter of taxes so that the income from the absentees will not be taxed twice

"It has been our aim that the refugee physicians licensed to practice in this state, and the foreign graduates licensed to practice in the state, be treated on a basis of equality with the American doctor before the law—in regard to commissions, and in regard to military service. Otherwise it would be an injustice to our native graduates of American colleges, as they would be called to duty and their practice would be left to the refugee physician and the graduates of foreign medical schools. Manifestly, this is an injustice to the patriotic native American graduate of an American school. We hope that the authorities in charge of our naval and military forces will see the force of the argument advanced to them and will treat these adopted citizens, and also the graduates of foreign schools, on terms of equality with our own graduates who are native-born citizens. This should be done so that the regulations will not work out prac-

tically to the detriment of the native-born American and the graduate of an American school—putting upon him the hardship of military service while his confreres from abroad and the graduates of foreign medical schools take his practice while he is away. It may not be military policy to put foreigners in key positions, but the diversity of Army medical work is such that a place could be found for them, and they should be treated on a footing of equality, as far as military service is concerned

"In these trying times, it is hazardous to be prophetic, and while we have reason to suspect that certain basic changes will take place in regard to industry which may require medical service, at the present time this is not a pressing factor for consideration and we prefer to leave this bridge uncrossed until we have approached it

"In conclusion this Committee wishes to express its sincere thanks for his cordial and ever willing cooperation to the General Manager of the Society, Dr Peter Irving, and to the staff of capable workers who have assisted the Committee in its necessary work, which has entailed daily contacts and daily attention"

## PART IX

### Workmen's Compensation

The Council through its Committee on Workmen's Compensation has continued during the past year to maintain an active interest in all phases of the Workmen's Compensation Law affecting medical practice in this state.

Nearly 19,000 physicians have been qualified by the various county society compensation committees or boards, and the majority of them are actually participating in the treatment of injured workmen. This makes available to the working men and women of this state a large reservoir of well-qualified physicians and specialists. The major activities of this Compensation Committee of the State Society have been directed to aiding the county medical societies in carrying out the functions that devolve upon their compensation committees under the Workmen's Compensation Law, such as (1) the qualification and recommendation of physicians to be placed upon the panel, (2) the setting up of standards in the various specialties to aid the committees in the task of qualifying applicants, as well as to help in any change of rating to which a physician would become entitled as a result of increased experience or embarkation in a specialty, (3) guidance to simplify and coordinate the administration and practice of the various county society boards in relation to the above procedures in the interpretation of the rules and regulations governing the Workmen's Compensation Law and of items in the fee schedule for medical service

Through the Bureau of Workmen's Compensation contact is made with more than seventy individual carriers, with the Compensation Insurance Rating Board, and with self-insured employers. Contact is also made with non-insured employers in relation to compensation problems and medical bills and with all the above in connection with the many phases of workmen's compensation practice affecting the medical profession and hospitals. Uniform prac-

tice and administration have been aided by the Bureau through its relationship with the Industrial Council, the Industrial Board, and the Industrial Commissioner.

The following totals indicate the number of physicians qualified in each county (excluding homeopaths and osteopaths): Albany, 284, Allegany, 41, Bronx, 1,976, Broome, 204, Cattaraugus, 80, Cayuga, 67, Chautauqua, 106, Chemung, 99, Chenango, 41, Clinton, 47, Columbia, 40, Cortland, 42, Delaware, 51, Dutchess, 146, Erie, 942, Essex, 33, Franklin, 64, Fulton, 66, Genesee, 53, Greene, 41, Herkimer, 57, Jefferson, 103, Kings, 3,457, Lewis, 23, Livingston, 53, Madison, 37, Monroe, 503, Montgomery, 61, New York, 4,797, Nassau, 490, Niagara, 164, Oneida, 230, Onondaga, 394, Ontario, 97, Orange, 149, Orleans, 26, Oswego, 72, Otsego, 63, Putnam, 15, Queens, 1,175, Rensselaer, 128, Richmond, 121, Rockland, 85, Saratoga, 67, Schenectady, 114, Schoharie, 29, Schuyler, 11, Seneca, 26, Steuben, 86, Suffolk, 186, Sullivan, 69, St. Lawrence, 90, Tioga, 37, Tompkins, 67, Ulster, 108, Warren, 56, Washington, 48, Wayne, 64, Westchester, 726, Wyoming, 40, and Yates, 27.

A total of 18,574 licensed physicians were qualified by the various county society boards up to February 1, 1941. In addition, a total of 292 physicians have been qualified by the Homeopathic Society and a total of 360 by the Osteopathic Society, making a grand total of 19,226 physicians qualified and authorized for workmen's compensation in the state to date.

**Arbitrations**—During 1940, sixty-four arbitration meetings were held, fifty-eight in the metropolitan area and six in upstate areas.

Bills amounting to \$93,253 14 were considered (metropolitan \$84,927 79 upstate \$8,325 35), of which \$83,792 25 was in dispute (metropolitan area \$76,993 90, upstate \$6,798 35), awards were made totaling \$49,083 19 (metropolitan area \$45,487 84, upstate area \$3,595 35).

The above represented 1,155 physicians' bills, awards were made in 1,047 and no awards in 102 instances. Four hundred and twenty-one were settled before arbitration for bills amounting to \$28,192.97, in which the amount in dispute was \$24,957.37.

**Upstate Arbitrations**—In the report last year the Committee went into great detail on the question of arbitration, and it is suggested that physicians would greatly benefit by reading this report again. Upstate arbitrations have not been numerous, indicating that most physicians throughout the state are receiving satisfactory payment for their services. It is hoped that the infrequency of arbitrations does not indicate that physicians are settling bills and allowing deductions where the latter are not indicated. A just and proper bill should be paid in full, subject only to the 5 per cent discount for payment within thirty days of the submission of the bill. Such discount should not be permitted on bills under \$15 and deductions should under no circumstance be permitted merely to avoid arbitration, inconvenient though that may be at times. The threat of arbitration should not deter a physician from insisting on payment in full of a just bill. However infrequent instances of this form of coercion may be, they should be

brought to the attention of the Director at once. Insurance carriers and self-insurers organizations have assured your Committee that they are not in sympathy with this procedure and will correct any instance of improper pressure being brought to bear on a physician to take a cut in a just bill.

It should be pointed out that as insurance carriers' representatives and physicians become more familiar with the interpretation of the rules and regulations governing medical care and the interpretation of the fee schedule there has been a great tendency to pay physicians' bills as rendered without the necessity of arbitration, relieving the arbitration calendar of many bills that represent only minor misunderstandings or misinterpretations of the fees to be paid under the statute, thus reserving arbitration for the more fundamental controversial issues, such as the claim of failure on the part of the physician to comply with the law in regard to prompt reporting of compensation cases, the necessity for prolonged treatments, the need for consultation, the failure to obtain authorization for physical therapy treatments in excess of \$25, the failure of physicians to contact the previous attending physician before ordering x-rays, laboratory service, and additional consultation, claims for fees in excess of the fee schedule not authorized in advance, and many of other principal objections to a physician's bill. Compared with the hundreds of thousands of bills submitted each year totaling about \$16,000,000, an insignificant number are forced to arbitration.

**Arbitrations—Statistics**—During the year 1939, 129 different bills of physicians in Bronx County were arbitrated. The total amount represented \$11,368 27. Of this amount \$10,540 82 was in dispute and was arbitrated. Awards totaling \$6,307 75 were made. Of 129 different bills the full amount of the bill was awarded by the arbitrators in twenty-five arbitrations. No awards were made in six of the 129 bills. In five of these six cases in which no award was made, this represented the total bill, while in the remaining bill something had been paid on the bill and no award was made on the balance.

In New York County during the same year, 258 bills were arbitrated, representing twice the number of bills arbitrated for Bronx County physicians. The total amount of bill was \$25,866 50, of which \$22,773 05 was in dispute and awards totaling \$12,994 75 were made. In fifty-one bills out of 258 the full amount was awarded while in thirty-two bills nothing was awarded. In twenty-three of these thirty-two bills the entire amount of the bill was in dispute, while in nine cases something had been paid on the bill.

Taking into consideration that entirely different arbitrators sat for Bronx and New York counties during the course of the year and that the arbitrators were changed from time to time, there is a close analogy between the figures here given. Out of 129 bills twenty-five were paid in full in the Bronx. Out of double that number of bills, or 258 bills, fifty-one were paid in full in New York.

The total amount of the awards in Bronx County was \$6,307 75, while in New York County, with twice the number of bills and a

little more than twice the amount in dispute, almost twice the amount was awarded—namely, \$12,994.75

In the nine counties studied—Bronx, Kings, Queens, New York, Nassau, Richmond, Rockland, Suffolk, and Westchester—677 bills were arbitrated, and the total amount of these bills represented \$69,031.52. The total amount in dispute was \$61,068.62, and awards totaling \$32,228.05 were made.

Out of 667 bills for this area, 100 were paid in full and no awards were made in seventy-nine bills. In sixty-one bills the arbitration was on the entire amount of the bill, while in eighteen of the seventy-nine something had been paid on the bill.

In considering the percentages, it is to be noted that in all bills where the percentage of deduction made by the arbitrators represented the total amount in dispute in both Kings and New York counties 43 per cent of the total amount was awarded in each of these counties. The same figures held true of Suffolk County.

Taking into consideration only those bills where deduction was made and not including bills awarded in full, the figures for Bronx are 44 per cent, New York 43 per cent, Rockland 42 per cent, and Suffolk 44 per cent. Higher amounts were deducted in Kings County (55 per cent), Queens County (52 per cent), Richmond County (fewer bills, 72 per cent), and Nassau County (55 per cent).

**Arbitration—Hospital Bills**—Under Section 13-g-2 is included the *modus operandi* of arbitration for hospital bills. For the past two years hospital bills have been arbitrated not under the provisions of this chapter but by a special arbitration committee set up by the Compensation Insurance Rating Board and the hospital organizations of this state. It is urged that Section 13-g-2 be modified to remove the necessity of the medical societies arbitrating hospital bills.\*

**Payment of Bills Not Objected to**—Under Section 13-g there is a provision that gives the employer or insurance carrier thirty days after the receipt of a physician's bill in which to demand an impartial examination of the fairness of the bill by arbitration. Otherwise the amount claimed by the physician is deemed to be the fair value of his services. However, there is no provision to enforce the payment of such bill should the employer or carrier refuse to pay it without civil action. Civil action, in our opinion, would unquestionably bring a verdict for the physician in such an event. It is our opinion that there should be a revision of this subsection 13-g to include a sentence to enforce such payment without the necessity of court action. A revision of the statute to bring this about is strongly recommended.

#### **Reports Required Under Section 13-a(4)**—Un-

\* During the year 1939 nearly 500,000 compensation accidents were reported. Owing to increased employment 1941 will see a larger number of such accidents.

In about 133,000 of these files were indexed and hearings held.

In the remaining 370,000 cases no files were made or hearing held.

We must take up the slack between the indexed cases and the nonindexed cases in order to assure payment to physicians for medical care in all compensable cases.

der the provisions of Section 13-a(4) a claim for medical and surgical treatment is not valid and enforceable until the physician has made out the necessary reports (C-104, C-4, C-14, etc.) as required by this Section. The Industrial Board may, however, excuse failure to give such notice if it finds it in the interest of justice to do so. Few insurance carriers or employers have taken advantage of this Section unless their interests were seriously prejudiced by the failure of the doctor to report a compensation case. Six years have elapsed since the passage of the amended Workmen's Compensation Law, and it is not to be expected that the insurance carriers will continue to be so lenient where a physician deliberately avoids his obligations under this Section. The Department of Labor has drawn attention to the failure of certain physicians to comply with the law, thereby prejudicing a workman's claim for compensation as well as the physician's own interest. While it is true there has been a marked improvement in reporting, it is recommended that county societies continue to emphasize the importance of this to their members.

**Workmen's Compensation Law—Section 13-a(5)**—Under Section 13-a(5) no claim for specialists consultation, surgical operations, or physical therapeutic procedures costing more than \$25 or x-ray or laboratory examinations costing more than \$10 shall be valid and enforceable unless the services have been authorized by the employer, insurance carrier, or industrial commissioner, or unless such authorization shall have been unreasonably withheld, or unless the services are required in an emergency. Under a strict interpretation of this statute, a carrier or employer might well refuse to pay a physician's bill unless he could prove that he had received such authorization in a nonemergent case or unless he could prove by documentary evidence that he had made a written request of the employer or carrier and that such request had been ignored for at least five working days. Even then the question of necessity for consultation might be raised. Although the industrial commissioner has the authority under the law to authorize treatment, such authority has never been forthcoming nor has any means of reviewing promptly the medical aspects of the case in order to obtain a prompt decision on the question of necessity for the procedure costing more than \$25 been set up within the Labor Department, therefore, some thought must be given to a mechanism whereby disputes with regard to the payment of a bill because of alleged failure of a physician to obtain authorization should be considered.

The Committee is of the opinion that a clause should be added to this Section to enable a physician whose bill has been objected to have his claim reviewed by an arbitration board as in Section 13-g. This would require an amendment to Section 13-g(2) to the effect that, if a physician renders a bill for services in excess of \$25 under section 13-a(5) and if the carrier objects to such bill within thirty days, the same shall be arbitrable. Such an amendment to the law would broaden the scope of the arbitration committee to include numerous disputes that arise under this Section. At the present time carriers frequently submit to arbitration volun-

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tarly on this issue. It should be made obligatory. Your Committee is of the opinion further that the Department of Labor should give consideration to the provisions of Section 13-a(5) which authorize the Industrial Commissioner to give authorization for operations, consultations, physical therapeutic procedures costing more than \$25, and x-rays and laboratory procedures costing more than \$10. This would certainly rebound to the advantage of the injured workmen and avoid the occasional charge that physicians are failing to give medical care where such authorization is refused by the carrier.

The Council wishes to advise physicians throughout the state that, while every possible advantage should accrue to an injured workman with regard to specialistic treatment and consultation, the attending physician should use his best judgment in old and protracted cases with regard to the necessity of consultation. A specialist receiving a patient from a physician with request for consultation or for x-rays or laboratory examination should give attention to the need for authorization and should be on his guard in old and protracted cases to ascertain whether the desired consultation is necessary and whether frequent consultations have not already been held. Where such consultations and examinations are desired for evidential purposes before the Department of Labor and are instigated by an attorney or claim representative through the intervention of the treating physician, the specialist should be on his guard and confer with the previous attending physician on the past history of the case and procedures already carried out in order to determine the need for the consultation, even though it be not in excess of \$25. Attention is again called to the rules governing the procedure to be followed by physicians when the carrier objects to further treatment.

In the February 1, 1941, issue of the NEW YORK STATE JOURNAL OF MEDICINE, there appeared an item under the heading Workmen's Compensation which was designed to familiarize physicians with the various forms that are required to be filled out and the changes made in the law effective July 1, 1940. There was a reprinting of this same item in the February 15 issue with a few corrections.

"We have been informed by the Director of Workmen's Compensation of the Department of Labor that many physicians throughout the state are not yet familiar with the amendments to the Workmen's Compensation Law which became effective on July 1, 1940. These were published in the NEW YORK STATE JOURNAL OF MEDICINE, June 1, 1940. The attention of physicians practicing under the Workmen's Compensation Law is again directed to these amendments, and they are urged to comply with them.

"It should be noted that the C-4 report must now be forwarded to the employer or insurance carrier and the Department of Labor, within fifteen days instead of twenty days as heretofore. This report should be notarized, but physicians are urged not to delay it if a notary is not available. The C-104 form is reportable within forty-eight hours. The new progress report (C-14) should be sent to the employer or insurance carrier and

the Department of Labor in all protracted cases every three weeks. The Law states that the C-14 report should be submitted when requested, by the employer or insurance carrier, but it is advisable to submit such reports, even though not requested, at regular intervals, in order to familiarize the employer or insurance carrier with the progress of the patient if the medical care continues beyond the first four weeks or so.

"Another amendment, effective July 1, 1940, gives to the Industrial Board the right to assess the cost of medical care against a non-insured employer. Physicians treating claimants whose employers fail to carry insurance should submit bills for medical service directly to the Department of Labor, care of the Industrial Board, 80 Centre Street, New York City, and send a copy of the correspondence and bill to this office.

"Workmen's compensation committees or boards throughout the state are urged to bring the above changes to the attention of physicians at the regular meetings of the county societies and by publications in local bulletins.

"The various forms (C-104, C-4, C-5, C-14, C-27) are available on application to the local county society office. Forms are obtainable by the societies upon application to the Department of Labor, Albany and New York offices. Physicians should not apply directly to the Department of Labor for blank forms."

The following is a brief summary of the order in which reports must be filled out and filed by the physician. On assuming the treatment of a case under the Workmen's Compensation Law a physician should immediately file a C-104 report with the Labor Department and either the insurance carrier or employer. This report should not be neglected, as the law requires that the form C-104 be sent within forty-eight hours of the first treatment of the patient. If the name of the insurance carrier cannot be ascertained immediately, the form should be sent to the employer with specific directions that it be sent by him to the carrier at once. Within fifteen days a second report must be filed in each case. This is the C-4 report. It also must be sent to the Department of Labor and the insurance carrier or the employer. This report should be notarized. It will, in most cases, save the physician the inconvenience of appearing at the Department of Labor for testimony. It serves as prima-facie evidence. However, if a notary is not readily available, the C-4 should not be delayed beyond the fifteen days and may be sent unnotarized.

The ophthalmologist reporting on eye cases, instead of the C-4 report, submits an ophthalmologic or C-5 report.

The C-14 report is known as the progress report and under the law need be filed only at the request of the employer or carrier and not oftener than every three weeks.

It is suggested, however, that all physicians file the C-14 report in all protracted cases at regular intervals, say every three to four weeks, so as to keep the carrier informed as to the progress of the case, the need for further treatment, etc. This will avoid misunderstanding over bills. The C-14 report may be used as a means

of requesting authorization for continued physical therapy beyond the \$25 fee and, if so used, should bear a notation requesting authorization for the continuation of treatment. The body of the report will indicate the necessity for such treatment to the employer and carrier and the Department of Labor. If a patient comes but once or twice and the case can be terminated within a few days, the physician may file only a C-4 notarized report and mark it *final* to indicate that treatment has been terminated. In such short cases this form will simplify matters and make it unnecessary to file both C-104 and C-4 reports.

If a patient returns to a physician after his case has been closed by the Department of Labor and if in the physician's opinion there are sufficient medical reasons to reopen the case and have another hearing by the Department of Labor, the physician should use the C-27 report instead of the C-4 report to reopen the case. A copy of this should be notarized and sent to the Department of Labor and to the insurance carrier or employer.

Specialists or consultants should always send a full report of the examination on their own letterhead to the Department of Labor and insurance carrier or employer. A copy should also be sent to the referring physician. A specialist or consultant need not file other reports unless he assumes treatment of the case, in which event he carries out the same procedure as though the patient had come to him for treatment. It is the responsibility of a physician authorized to treat compensation cases to go carefully into the history of every patient who comes to him for treatment to ascertain whether or not the injury was sustained in the course of the patient's work. In the vast majority of cases the circumstances of the injury will indicate whether or not the case is a compensable claim. In some instances, despite scrupulous care in taking a history, it will not be immediately apparent to the physician that the case is covered by the Workmen's Compensation Law. He will treat the patient and may be paid by the employee. However, if the patient makes a claim subsequently, the physician will be required to file the necessary forms. Even though he is of the opinion that the injury sustained for which he treated the patient is not covered by the law, he must make out the forms so that the labor department, which has jurisdiction, may determine the question of compensability. The physician may indicate in his report, or in a separate letter in a case which he believes not to be compensable, his reasons for treating the patient as a private patient, and he may give such other information as may substantiate his opinion relating to the question of compensability. Should the case be declared compensable, the physician will be required to reimburse the claimant and look to the employer or carrier for the payment of his bill. There are many reasons why, under such circumstances, a bill may be well in excess of the minimum. There are usually adequate reasons why the physician should be excused by the Industrial Board for failure to file his reports on time if the employer or carrier raise this issue. Should complications of this sort arise in the practice of a physician, they may be brought to the attention of this

Bureau for such help as it may be able to give.

**Rule No. 7**—A meeting was held recently by the Industrial Council at the suggestion of the insurance carriers organization to discuss a change of Rule 7 (of the fee schedule) which gives the employers or insurance carrier five working days in which to respond to a request for authorization under Section 13-a(5).

"When it is necessary for the attending physician to engage the services of a specialist, consultant or a surgeon, or to provide for physiotherapeutic procedures, costing more than \$25, or to provide for x-ray examinations, or special diagnostic laboratory tests costing more than \$10, he must secure authorization from the employer or insurance carrier or the Industrial Commissioner."

E.g., when the total fees for physiotherapeutic treatment approach the sum of \$25 the physician shall file an additional report and request authorization as prescribed in Section 13-a-5.

"This Rule also applies to hospitals, specialists, consultants, and surgeons who are actually engaged to perform such services."

"If telephone request for such authorization is made, it should be confirmed by letter. If such authorization is not forthcoming or is not denied within five working days, or if such denial is not justified medically or otherwise, the special services required for the patient's welfare should be proceeded with on the ground that authorization has been unreasonably withheld."

"Such authorization is not required in an emergency under the provisions of Section 13-a-5."

It was pointed out by the carriers that in extremely old cases it is not always possible either to affirm or deny authorization within this period. Their plea was for an extension of this period in such cases. The Director of the Workmen's Compensation Bureau of the State Society contended that there was no need for revision of this rule, which has been in effect for more than two years and has worked satisfactorily. The Industrial Council has as yet made no change in the rule. It is strongly recommended that there be no change in the rule as it would often inure to the disadvantage of injured workmen should authorization be delayed beyond this period.

**Rules for "Further Treatment"**—During the past year there was a protest by the insurance carriers on the rules promulgated by the Industrial Council. As a result of additional conferences with the representatives of the insurance carriers and self-insurers organization, the Medical Society, and the Industrial Council, the following rules were promulgated and are now in force and to be observed by all insurance carriers, employers, and physicians. Instances of refusal or failure of an employer or carrier to comply with these rules should promptly be reported to the Director.

*Procedure for adjusting differences of opinion between attending physicians and the examining physicians employed by carriers and employers as to the need for further treatment*—Rule 1. The employer or insurance carrier must exercise their right to have a medical examination

made of a compensation claimant by their medical examiner, on which a direction to the attending physician to stop treatment must be based. Rule 2 A request forwarded to the attending physician to stop treatment must be accompanied by a report of the medical examiner employed by the employer or insurance carrier setting forth the physical findings. Rule 3 If the attending physician does not agree with the findings of the medical examiner, he must arrange to confer with the medical examiner for the purpose of reaching an understanding. Rule 4 If the attending physician and the medical examiner are unable to agree, a joint examination of the claimant should be arranged for the purpose of comparing the findings of both the attending physician and the medical examiner.

"Rule 4 is not mandatory although the representatives of the carriers and employers agreed that this procedure should be used whenever possible."

Physicians will conserve their interests by filing a progress report every three or four weeks in a protracted case. If physical therapeutic treatment is given, when the total amount aggregates close to \$25 the progress report may be used as a means of recording the necessity of further treatment and requesting authorization for same. If the employer or carrier then does not comply or answer within a reasonable period, say a week, it may be taken for granted that the carrier has unduly and unreasonably withheld authorization, and, if further treatment is necessary, the physician will of course continue. Should the carrier or employer comply with the rule and submit to the attending physician a medical report indicating that no further treatment is necessary, the physician should confer with the physician making the examination for the employer or carrier and, if no agreement can be reached, suggest the appointment of an impartial examiner agreeable to both sides. If the carrier or employer refuses such consultation, the case should be referred to the labor department for a prompt hearing and examination on the question of the need of treatment. During the interval the physician will be guided as to treatment by the needs of the patient. In every such case the attending physician should either attend the hearing and be present at the medical examination or give to the employee a note indicating the medical facts in the case so that examiner may be conversant with all the details of the dispute. Unless a medical examiner makes a definite statement in regard to treatment, the fact that he states there is "partial disability" or "some earning capacity" is not itself a direct mandate to proceed with treatment nor a denial of the necessity of treatment. Medical examiners will not, and should not, take a position with regard to medical treatment. Where the case is a controverted one, the medical examiner of the Department of Labor may recommend the appointment of an impartial expert (especially qualified physician) to examine the patient and make a report before making a statement in regard to the controverted issue or on the necessity for further treatment. In every case where there has been a lack of agreement between the attending physician and the carrier (employers

medical representative) as to the necessity for further treatment, it is recommended that at least two examiners of the department examine the patient, after reviewing the file carefully, before making a pronouncement on the need for and advisability of further treatment. In controverted cases where the question of causal relationship is involved, it would seem that the patient's physician or consultant should more often be called to testify than is the practice at present. This is strongly urged.

**Qualification of Physicians**—It has been the purpose of the Council Committee to standardize the procedure of qualifying physicians (by the County Society Compensation Committees or Boards), giving due consideration to the varying standards of practice throughout the state. During the past decade there has been a gradual approximation to the standards of the large cities by physicians in the smaller communities and rural areas of this state. While the number of specialists available in rural areas is not generally as great, the qualifications of such specialists are, generally speaking, similar to those in the large cities. For economic reasons it is often impossible for a well-qualified specialist to confine himself strictly to his specialty, especially in the rural areas. While the national boards have shown a tendency to demand stricter adherence to specialization for physicians throughout the state, there is still reason to believe that well-qualified physicians may, for economic reasons, not be able to adhere completely to their specialties. The Committee has set up standards for qualifications in the various specialties which have been distributed to each county society and serve as a guide to the compensation committees. While these standards are not mandatory, they have generally speaking been accepted with minor modifications to conform to the pattern of practice in the particular community. It is not possible in the small county societies to set up special advisory qualifying committees in each specialty. This has been done in some of the large counties. The Committee strongly advises that, whenever possible, such committees be set up to serve in an advisory capacity to the workmen's compensation committee or board. In the smaller counties it would be advisable, so far as possible, to place on the compensation committee itself specialists, as well as general practitioners, to pass upon the qualifications of applicants for original rating or rerating.

Occasionally, there arises some difficulty in interpreting the symbol "X," which ordinarily indicates that a physician is in general practice or not confining himself exclusively to a branch of medicine in which he is especially qualified. The symbol, "X" when it precedes a specialty rating (such as XA, XE, etc.), may indicate either that the physician is not confining himself exclusively to his specialty or that he has not yet been deemed fully qualified to act as a consultant and to accept referred work in a large city or in the metropolitan area. It is generally accepted in rural areas and smaller communities throughout the state that a physician with an "X" rating followed by the symbol of a specialty is competent and qualified to act as a specialist if he in fact is known to so act in private practice. In larger communities, however, there has been a tendency to confine referred work or con-

sultation to physicians who are fully qualified and who have an "S" rating. The reason for this is not only the competence of the physician in technical work but also his judgment, knowledge, and experience, which can only be acquired over a period of years. This is especially significant in regard to expert testimony before a referee or the Industrial Board. There is ample reason, precedent, and authority to restrict consultation and referred work to the best qualified men in the profession. Difficulty arises, however, when a more or less simple operative procedure is referred to a younger specialist who has been deemed qualified in the specialty but not fully qualified by reason of lack of years of experience to obtain the full "S" rating. Such a physician possesses usually an "X" rating either in surgery (XA), orthopedic surgery (XB), or in one of the other specialties. In instances of this sort the "X" rating indicates not necessarily that the young specialist is engaged in general practice but may merely be a temporary partial rating until he has fully complied with all the standards set up by the qualifying committees to enable him to obtain the "S" rating. A satisfactory arrangement has been made in the metropolitan area with many of the insurance carriers whereby, when a physician with an "XA," "XB," etc., rating operates on or accepts a case from another physician, the county society compensation chairman is called upon for an opinion as to the physician's qualifications to cope with the particular situation. This has worked out satisfactorily and has served to obviate many difficult situations in which the carrier objects to such physician's bill because he accepted a referred case. The interests of the workman are protected because the county society is able to determine quickly whether, in accordance with the qualifications on file, the particular physician is indeed qualified to cope with the situation or was so at the time he accepted the referred case. Therefore, it should be noted that, especially in the case of younger specialists, the "X" rating may denote simply that the physician, although qualified, is not deemed fully qualified to act in all cases as a consultant or to accept referred work as such. In due course such younger specialists, on acquiring added experience, obtain the full "S" rating.

**Multiple Symbols**—County societies are again urged, if they have not already done so, to simplify the symbols given to practitioners under the Workmen's Compensation Law in accordance with instructions published by the Council in its report of 1940 in the *JOURNAL* of April 15, 1940, and approved by last year's House of Delegates.

In the field of x-rays, county societies are urged to use the services of the X-Ray Examining Committee set up by the Committee with the approval of the Council before granting "D" ratings.

**Appeals over Decisions of Compensation Boards**—In the course of the past year a few appeals were taken over the decisions of compensation boards with regard to qualifications, and in each instance the action of the county society has been sustained by the Industrial Council. It is recommended that before any compensation board or committee refuses to qualify a physician he be given a *personal* hear-

ing before the board or committee and that, in case of rejection either of an original application or request for revision of rating, minutes of the committee or board be recorded and a copy sent to the Director of the Bureau of Workmen's Compensation, Department of Labor.

In each instance the Director has personally appeared before the Industrial Council to assist the representative of the county medical society in presenting its case.

**Employers' Medical Bureaus**—Where county societies have recommended the granting of an employers' medical bureau license to the Department of Labor, it is now recommended that the county society compensation committee or board keep in contact with such bureau and ascertain whether the bureau is maintaining proper equipment and complying fully with the provisions of the law, especially in regard to the reporting of cases. Physicians employed by such bureaus are not exempted from the provisions of the law in regard to the reporting of all cases to the Department of Labor which require treatment beyond the first day.

Complaints have been made that physicians employed by employers' medical bureaus and occasionally, independent physicians are rendering medical care at the behest of employers without reporting minor injuries to the Department of Labor and that some fail to make "full and truthful" reports in regard to the patient's disability. This is a practice that cannot be too strongly condemned, as it may seriously jeopardize the rights of the injured worker. If such practice can be proved, there is ample authority in the law to remove the offending physicians from the panel.

The labor department has under consideration the revising of the rules governing employers' medical bureaus in order to make for better accommodations for patients in such bureaus set up temporarily in the course of construction of buildings, plants, or public projects. The committee strongly recommends that these revisions of the rules be made as soon as possible in order to improve the quality of medical care rendered to workmen on such projects.

**First-Aid Stations**—It is again recommended that rules and regulations be set up by the Department of Labor to cover first-aid bureaus.

**Self-Insurers**—During the past year there has been an improvement in the promptness with which self-insurers have given attention to bills for medical services. The Bureau is now in a position to make immediate contact with officials of the self-insurers organization in respect to complaints received from physicians affecting self-insurers.

**Bureau's Aid in Settling Bills**—The Bureau has continued to be available to the various county societies in the settlement of bills or other disputes between physicians, carriers, or employers and, through its contacts with the insurance carriers' organization, self-insurers' organization, the Department of Labor, the Industrial Council, and the Industrial Board, and with individual insurance carriers, has been able to iron out successfully the majority of the matters brought to its attention to the mutual satisfaction, it is hoped, of all parties in interest. The Bureau is available at all times to assist county societies and the compensation com-

mittees and individual physicians in all compensation problems. It is strongly recommended that Bureau be consulted in the first instance in all compensation matters rather than the labor department.

**Reports from Labor Department**—A promise has been obtained from the Deputy Industrial Commissioner to make available to this Bureau and to the local county societies copies of all medical reports issued by the Department of Labor after hearings and examinations. These are now available to the claimant but are not often given to the attending physician. It is hoped in the near future to make these reports available to the various county committees. This should go a long way to avoid or settle disputes as to the necessity for treatment in prolonged cases especially.

**Fees for Testimony**—The Director appeared by invitation before a meeting of the Industrial Board to discuss the question of fees to be paid for the testimony of physicians and specialists after July 1, 1940. Prior to this time, the fees and rules and regulations were fixed by the Industrial Commissioner. Subsequent to July 1, 1940, the fees and regulations were to be fixed by the Industrial Board. The Industrial Board indicated that it would continue to pay as heretofore and as contained in old Rule 18 of the original schedule.

"The provisions of Section 13-f(2) shall apply only to the physician selected to treat the claimant under the provisions of Section 13-a(1).

"Such physicians are entitled to a fee for attendance at a hearing when subpoenaed by any party in interest or when directed to attend by a Referee or when produced by an insurance carrier or employer.

"When the physician is a general practitioner his fee shall be ten (\$10) dollars plus mileage (outside New York City) and a fee of five (\$5) dollars for each additional case on which he testifies at the same appearance.

"When the physician is a qualified specialist and is so designated, and has examined, consulted or treated under his specialty, his fee shall be twenty-five (\$25) dollars plus mileage (outside New York City) and a fee of twelve dollars and fifty cents (\$12.50) for each additional case on which he testifies at the same appearance.

"A physician, other than the attending physician, who testifies at hearings or examines claimants or participates in examinations for evidential material for compensation hearing purposes only, may accept fees for such services from claimants, employers, or carriers. In no event shall this fee be fixed by the Referee.

"Nothing herein contained shall limit or abridge the power of the Industrial Board in a proper case, where the circumstances warrant, to fix a fee in an amount other than as herein contained."

These regulations shall become effective July 1, 1940.

The determination of whether the physician is to be paid rests with the referee who must make an award if the physician's testimony is required in the case in the opinion of the referee.

**X-Rays Ordered by Referee**—On June 1, 1940, the Director of Workmen's Compensation of the Department of Labor rendered the following opinion in answer to an inquiry from our Bureau, in reference to an order from a referee to a carrier to produce x-rays at a subsequent hearing, as to the rights of the attending physician to select the roentgenologist.

"It is my opinion that the claimant still retains the right to go to his own physician to have x-rays taken. The order is frequently made as a direction to the carrier in order to give assurance that the x-rays may be available at the next hearing thereby avoiding delay. It is not intended to place a selection of the physician to make this examination in the hands of the insurance carrier."

On June 7, 1940, this matter having been referred to the Industrial Board, it passed the following resolution.

"Resolved, that the Industrial Board believes that the referee should use his discretion when directing an x-ray examination to be made for comparison or evaluating purposes. The Board is of the opinion that the carrier should provide such x-ray examinations and reports generally, but if the referee believes that the claimant should produce the same he may so direct the claimant and if the cost of the x-rays exceeds \$10 he could obtain authorization from the carrier before directing the claimant to produce same."

Your Director protested this resolution as being not in accordance with the spirit and letter of the Workmen's Compensation Law and was given an opportunity to appear before the Industrial Board on June 26, 1940. Your Director at this time argued that where the x-rays are required for diagnosis or for the guidance of physicians of the Department of Labor in expressing an opinion as to disability, scheduled loss, etc., it was the patient's right to choose a qualified physician to take such x-rays and render an expert opinion. Your Director further argued that it was not within the province of the referee in an ordinary case to direct the choice of a physician or of an x-ray expert. It was our opinion that in *controverted* cases where the evidence adduced was of a conflicting nature the Industrial Board or the referee, on the recommendation of a medical examiner of the Department of Labor, had authority to designate an especially qualified physician (roentgenologist) to examine the patient and render a report. In ordinary cases, however, the choice of the roentgenologist lies with the claimant and his attending physician unless the claimant waives his right in writing to free choice.

Under date of July 29, 1940, as the result of this hearing the following action was received from the Industrial Board.

"Resolved, that the Industrial Board hereby rescinds its resolution of June 7, 1940. Further resolved, that the Industrial Board is of the opinion that where the referee directs the taking of x-rays it is the privilege and right of the claimant to furnish such x-rays payment for which shall be in accordance with Section 13-a(5) of the Workmen's Compensation Law." This resolution was published in the New

YORK STATE JOURNAL OF MEDICINE, September 1, 1940, issue

On December 5, 1940, your Director was informed that the General Manager of the Compensation Insurance Rating Board had considered the above resolution and that the Rating Board and its Medical and Claims Committee were not in favor of the action taken by the Industrial Board. They requested a rehearing, which was scheduled for Friday, December 13, 1940, to which your Director was invited. At this hearing argument was again had along the lines indicated above and the decision of the Board will be rendered on March 14, 1941.

**No-Lost-Time Cases**—In our report of last year we indicated that doctors were confronted with the situation in which when they submitted bills for medical care of cases from which the patient suffered no lost time or less than seven days lost time the carriers objected to the bills on the ground that compensability was not passed on by the Department of Labor. It was ascertained that the Department of Labor does not make up a file in every accident reported and hearings are not held in many such cases. By agreement with the Compensation Insurance Rating Board after a hearing, the Medical and Claims Committee of the organization held on May 14, 1940, passed the following resolution:

*"Resolved, That it is the sense of the medical and claims committee that medical bills should not be honored by the carriers in all cases in which disability does not exceed seven days, provided there has been submitted to the Department of Labor by the carrier form C-6 (notice to the Industrial Commissioner that payment of compensation has begun without awaiting award of industrial board) or form C-7a (report to the industrial commissioner of reason payment of compensation has not begun) and provided such bills conform to all provisions of the law as to reasonableness, timeliness of reports and otherwise, and further that all carriers be notified to this effect."*

This disposes of most no-lost-time cases with the exception of those in which the carrier or employer controverts the claim of the injured employee on the grounds of notice of accident or causal relationship. In such cases the C-7 form is filed which requires a hearing before the referee, and in all such cases bills will be held up pending the determination of causal relationship. This leaves us with a residuum of cases in which the patient has been treated and is not entitled to compensation because disability did not exceed seven days in which a C-7 is filed and in which a hearing is called but where the claimant for one reason or another fails or refuses to put in an appearance at the hearing. Your Director has suggested to the Department of Labor and to the insurance carriers' organization a means of controlling this situation, and the matter is still under consideration by the Department of Labor.

**Industrial Dermatitis**—In last year's report of the Council there was discussed at length the problem of industrial dermatitis. Again this year the Committee met with the representatives of the insurance profession, self-insurers, and their medical expert to consider further the plan suggested by us then and now made more

concrete. Representatives of the Compensation Insurance Rating Board and self-insurers organization have the plan under advisement, and we are hopeful of a meeting of the minds on this subject in the near future. The plan will then be submitted to the Industrial Commissioner, Industrial Board, and the Industrial Council for approval.

**Reporting Forms**—By arrangement with the labor department, the supplying of forms required by physicians is effected through the local county medical societies. The secretary of the county medical society or chairman of the workmen's compensation committee or board will apply to the nearest district office of the Labor Department for a supply in bulk of the various forms, which will then be available to physicians in the district by mail or personal contact. The expense incurred in mailing forms to physicians who do not call for them should be reimbursed to the society by the physicians. The actual expense of mailing out one pound (about 100 forms) is 7 cents for postage, plus 3 cents to include wrapping, addressing, and notification expense. Physicians are requested not to apply to the labor department for forms but to their own county medical society.

**Activities of Bureau**—The activities of the Bureau have increased to such an extent that at the request of the Manager of the State Medical Society, Dr. Peter Irving, a brief summary of a typical month's activities of the Bureau was included in the Council report of November 8, 1940. During this one month there were in quires or matters concerning 21 different county societies involving the labor department or one of its divisions, the New York Rapid Transit System, the Corporation Counsel of the City of New York, the State Insurance Fund, and numerous individual insurance carriers and employers, and these were the method of selection of arbitrators in upstate county societies, questions concerning the arbitration of medical bills, questions concerning the right of the county society to make a change in a physician's compensation rating, questions concerning compensability and causal relationship, information concerning the difference between a first-aid station and an employer's medical bureau, and the rules and regulations governing such bureau or first-aid stations, intervention by medical society at request of insurance carrier to appoint a medical examiner on the question of necessity for further treatment, inquiry concerning a hospital rendering bill for anesthesia, questions concerning proration of medical bills of physicians practicing in different counties, conferences with insurance carrier on request of a county society in respect to fee for multiple injuries, adjustment of dispute when physician was rated differently by two county societies, arrangements for arbitration in six upstate counties and appointment of arbitrators, etc., adjustment of dispute between physician applying for compensation rating and a county medical society over fee charged by county society, adjustment of dispute over assistants' fees between insurance carriers and physicians in a county where the local hospital does not provide intern service, information over ownership of x-ray films and perusal of same by insurance carriers, adjust-

ment of dispute between carrier and county society over failure of carrier to consent to arbitration on question of improper transfer of patient, numerous inquiries in county societies concerning specific fees not mentioned in fee schedule and explanation of fees mentioned in the fee schedule, correspondence with attorney on question of proper fee for hernia operation in a hospital without intern staff, correspondence with division of after care in Department of Labor in silicosis case, correspondence with Compensation Medical Registrar concerning revocation of licenses of physicians throughout the state found guilty of felonies, conferences and correspondence with New York attorneys and with secretary of supreme court justice concerning decision rendered by Appellate term in relation to physicians' bill where either physician or employer has refused to arbitrate, continued correspondence with Compensation Medical Registrar on payment of medical bills in non-insured cases, correspondence with Osteopathic Medical Society, State of New York, on question of charges for x-rays, correspondence with insurance carrier concerning principle involved if physician accepts fee from patient although the labor department has declared no further treatment was necessary and carrier refuses to authorize further treatment, correspondence with out-of-state insurance carriers with relation to proration of physicians' bills, correspondence with out-of-state physicians in reference to applications to practice under the Workmen's Compensation Law of New York State, inquiry from Executive Secretary of the Medical Society of Rhode Island concerning Workmen's Compensation Law.

Among the items considered were fees to be paid to physicians and roentgenologists for multiple x-ray examinations, and hearings were held with insurance carriers and self-insurers and with Industrial Council on this problem.

There was a failure of labor department to index or report compensation case because of lack of appropriation and personnel, negotiations with labor department were held on this problem.

**Fees for X-Rays of Multiple Injuries or Parts** — A revised reprinting of the fee schedule was published in the course of the year, and a new printing is promised for the near future. This will contain the revisions agreed upon in regard to x-ray fees. The revision of the fee schedule affecting multiple x-ray examinations has been promulgated by the Industrial Commissioner on March 10, 1941. By agreement, the schedule will apply to all unpaid x-ray bills as of November 15, 1940.

X-rays of multiple injuries or parts shall be charged as follows:

- (a) For two contiguous parts, the charge shall be the greater fee plus 50 per cent of the lesser fee,
- (b) For two remote parts, the charge shall be the greater fee plus 75 per cent of the lesser fee,
- (c) For three or more parts, whether contiguous or remote, the charge shall be the greatest fee plus 75 per cent of the total of the lesser fees.

There shall be no charge under this formula

for x-rays of two or more parts or regions included in any line item of the minimum fee schedule.

No charge shall be made for comparative x-rays except when such x-rays are specifically authorized by the carrier or industrial commissioner. Comparative x-rays specifically authorized shall be subject to fees for contiguous and remote parts as provided in this formula.

In explanation of the paragraph following (c) it may be stated that where the x-ray schedule of fees already allows a discount for more than one part, as in items 889-890, 1089-1089a, 1230, 1231, the multiple rule just promulgated does not apply. Thus, if a head and face and two spinal regions were x-rayed by an SD man, the skull fee would apply (\$20) and item No. 889 or \$25, a total of \$45. If, however, a head and face and cervical spine were x-rayed, the skull fee of \$20 would be paid in full plus one-half of item 884 (this being a contiguous single part). The above revision applies only to multiple examinations at one time.

**Proposed Amendments to Workmen's Compensation Law** — An amendment to the Workmen's Compensation Law passed in 1940 became effective July 1, 1940, and gave to the Industrial Board the power to fix a fee for medical service against a noninsured employer. This law applies to all bills for services rendered on and after July 1, 1940. Such bills, if not paid in full by the employer, should immediately be sent to the Department of Labor, Division of Workmen's Compensation, for action by the Industrial Board.

A bill has been introduced in the present legislature which would permit municipal hospitals that now may treat compensation cases only in emergency and only during the pendency of the emergency to treat compensation cases where the employer or carrier refuses or neglects to authorize hospital services required under Chapter 258, Section 13, and permit the employee to select any hospital for care and treatment in accordance with the rules and regulations prescribed by the Industrial Commissioner. We are opposed to this bill, as a review of the situation indicates no real deprivation of hospital service to injured workmen. Furthermore, compensation cases should not be treated as ward patients but as semiprivate patients, and this type of service is not afforded in municipal hospitals.

A bill introduced this year in the Assembly provides for an amendment to the Workmen's Compensation Law to cover all civil service employees of a municipal corporation or other subdivision of the state except in the uniformed police and fire force.

We endorse again this year an amendment (by the labor department) to the Workmen's Compensation Law permitting applicants for employers' medical bureaus or x-ray laboratories who have been denied a license by a county medical society compensation board, or where the board refuses to act within a reasonable period of time, to apply to the Industrial Council for a review of the refusal or failure and for issuance of a license.

Certain other amendments will be required to integrate this change in Section 13-c and in

other chapters of the law, such as subdivision 4, Section 10-a of the Labor Law

A legislative conference in the Department of Labor, in which this Bureau is included, has under advisement an amendment to Section 13-d(2)c which now reads "has failed to submit full and truthful medical reports required to be made by him to the commissioner, or the industrial board" It is the purpose of the Commissioner to have power to penalize a physician who persistently refuses to file reports with the labor department (see above)

**Podiatry**—From time to time, persons who have been licensed by the state to perform limited functions such as optometry, physical therapy, podiatry, etc., have pressed for independent functions under the education laws of this state. These limited practitioners have, from time to time, attempted to obtain independent authority to treat persons coming within their so-called fields. It has always been the opinion of the organized profession that the primary interest should be the welfare of the citizen. It would not be in the best interests of the public to allow such limited practitioners who are not fully qualified to diagnose medical conditions, and to have independent authority in the treatment of patients. This applies with great force to the Workmen's Compensation Law. Under the provisions of Section 13-b(c), certain limited scope is given to physical therapists and other technicians under the direct and personal supervision of qualified and authorized physicians to treat injured workmen within the range of the licensed practitioner's authority. To permit such practitioners to enter into the practice of accepting cases for treatment without the active supervision of a licensed and qualified medical practitioner is fraught with great danger. An attempt was made this year by podiatrists to obtain the same authority to diagnose and treat foot injuries as is now given under the Workmen's Compensation Law to practitioners of medicine. Aside from the material aspects involved, it would not be in the interests of the injured workman should such partially trained practitioners be allowed to assume independent status in the diagnosis and treatment of injured workmen. It is strongly recommended that any and all attempts to permit partially trained practitioners to practice under the Workmen's Compensation Law be combated for the reasons mentioned above.

## PART X

### General Matters

There follow in this Section of the Council Report a number of items that fall into different categories

**Memorial to Dr Guy S Carpenter**—The Council adopted the following memorial

"Dr Guy S Carpenter, of Waverly, New York, member of the Council of the Medical Society of the State of New York, died August 28, 1940, age sixty-six

"His life exemplified the beauty and value of the simple homely virtues. The eminence he attained was out of all proportion to the radius of his professional activities. Honesty, fairness, kindness, devotion to duty, sound judgment, were so marked in him that the knowledge of his

worth went far beyond the small community in which his life was spent, so that he was called to important responsibilities with the State Society of his profession

"Dr Carpenter has served as vice-president, and as councilor of the Medical Society of the State of New York, being the Chairman of its Committee on Publicity for the past three years. He was a past-president of the Tioga County Medical Society and for thirty-three years had served as Waverly Village Health Officer. He was a delegate to the American Medical Association, a member of the New York Sanitar Officers' Association, of the American Association of Anaesthetists, of the Eastern Anaesthetists, and the American Public Health Association

"Though no greater tribute to his character could be offered than that given by his fellow practitioners, yet the esteem of his neighbors in the intimate community which found his daily life as open as a book, must serve as a living memorial to the widow and brother who go the rest of the way without him

"'Beloved Physician,' said the *Waverly Sun* in commenting on his death. 'A genial gentleman, who has not only numbered his friends by the legion, but who has been outstanding in humanitarian and community welfare work in this valley for two score years. He had practiced medicine in Waverly since his graduation from Cornell Medical College in 1899. During these forty-one years he has brought hundreds of the present residents of this valley into the world, has brought back countless others from the brink of the grave, and has eased the passing of many more whose time on earth was done.

"It was, perhaps, symbolical that Dr Carpenter should be stricken and end his days at the Tioga General Hospital. Because no one was more closely identified with the conception, the building, and the progress of the hospital than was he. For twenty years he had been president of the Old Peoples Hospital in Sayre, the forerunner of the present fine institution in Waverly. Then, when the Tioga General was completed ten years ago he was elected its first president, and for the last eight years he has served as Chairman of its executive committee

"Dr Carpenter was an active member of the Waverly Methodist Church. A member of the Board of Trustees for twenty-five years, at the time of his death he was chairman. He was a member of the Waverly Masonic Lodge and of the Odd Fellows

"Four Methodist clergymen officiated at the funeral, which was attended by seven hundred persons. During the services, the Waverly Free Library was closed, out of respect, he was an original director. The offices of the town of Barton, and a number of private stores and offices, also were closed"

**Election of Councilor**—At its meeting on October 10, 1940, the Council unanimously elected Dr Floyd S Winslow of Rochester to fill the vacancy created by the death of Dr Carpenter, with term expiring in 1941. Dr Winslow was appointed, on nomination by the President, as Chairman of the Council Committee on Medical Publicity vice Dr Carpenter

**Nominations**—On request of the State Board of Examiners of Nurses, the Council nominated Dr Peter Irving to succeed Dr Nathan B Van

# REPORT OF THE COUNCIL

Etten on expiration of his term as member of the Nurse Advisory Council on December 31, 1940 Dr Irving was appointed for the term of three years from January 1, 1941

On request of the State Board of Medical Examiners, the Council nominated Dr Terry M Townsend to succeed Dr Orrin S Wightman resigning as a member of the Committee on Grievances of the State Department of Education. Dr Townsend was appointed for the term that expires in 1944.

Amendments to the State Education Law — Dr Townsend brought to the Council a request from the Committees on Grievances that it endorse certain recommendations looking toward amendment of the present law as to methods by which the Committee on Grievances does its work. The Council approved these and transmitted its endorsement to the Board of Regents. They were

- 1 The present membership of the Committee consisting of ten shall not be changed
- 2 No change shall be made in the law so as to provide compensation for members of the State Medical Grievance Committee
- 3 It is recommended that the Law be changed so that instead of hearing being held by subcommittees of three, that one of the members of a subcommittee of three of the Medical Grievance Committee be designated by the Chairman as a committee of one to hear and take testimony and report findings and recommendations to the State Medical Grievance Committee. Prior to the meeting of the Medical Grievance Committee the record for each case shall be submitted to each of the members of the said committee so that they may read same prior to reaching a determination upon all the facts

- 4 It is recommended that the Law be changed so that instead of requiring a unanimous vote for guilt that a vote of two-thirds of the members of the full Medical Grievance Committee be deemed sufficient and that the vote of the committee shall be recorded
- 5 It is recommended that Section 1265, Subdivision 4, sentence 3, shall be amended so as to eliminate from that sentence the following language "all cases in which said committee shall deem a trial necessary"
- 6 It is recommended that Section 1265, Subdivision 4, sentence 4, shall be amended so that the provision now pertaining to school of practices shall read "the same school of practice which has a representative on the committee"

It was understood that, as to No 4, the change from a unanimous vote of all members to a two-thirds vote, would obviate the delay now produced by absence of just one member. Amendment to the Nurse Practice Act — Dr Irving brought back from a meeting of the Nurse Advisory Council information on a question discussed in connection with an amendment to the Nurse Practice Act that had been planned with the approval of the New York State Nurses Association and the Board of Examiners of Nurses. This related to one provision for licensing of practical nurses

This provision is that applications for practical nurse licenses must be "endorsed by two physicians, members of a county medical society". It had given so much extra work to the Board of Examiners' office that the question had arisen of deleting the phrase "members of a county medical society".

After discussion the Council went on record as in favor of retention of the requirement that the endorsing physicians be members of a county medical society. Transmission of this position to the Board of Regents and the State Nurses Association was ordered.

Annual Meeting Arrangements — The Council on nomination by the President appointed Dr J Sidney Ritter of New York as secretary of the Section on Urology to take the place of the late Dr Lisle B Kingery.

At the suggestion of the New York Society for Medical History, the Council created a new Session of the State Society on the History of Medicine to hold its first meeting at the Annual Meeting of the State Society in Buffalo on April 30, 1941. On nomination by the President, the Council appointed the following officers:  
Emerson C Kelly, M D, Chairman Albany  
George Rosen, M D Brooklyn  
Edward F Hartung, M D New York

The Council approved an arrangement recommended by its Committee on Scientific Program that a Round Table Conference on Tumor Clinics be held during the Annual Meeting under the chairmanship of the Director of the Division of Cancer Control of the State Department of Health, Dr Louis C Kress. This will occur on Wednesday evening, April 30, 1941.  
Delegates to Vermont State Medical Society — As exchange delegate to the Annual Meeting of the Vermont State Medical Society the Council appointed, on nomination of the President, Dr Harry Dan Vickers, of Little Falls, and Dr Denver M Vickers, of Cambridge, as alternate. Both were able to attend the Vermont meeting and extend the greetings of the Medical Society of the State of New York.

## PART XI

### Other Matters

Still further matters of various nature have been considered by the Council and they are the subjects of this final Section of this Report.  
Motor Vehicle Drivers — Medical Examinations — Through the Committee on Public Relations and Economics  
Augustus J Hambrook, M D, Chairman

Herbert H Baucus, M D  
Louis H Bauer, M D

Troy  
Hempstead  
contact has been had from time to time with the Commissioner of Motor Vehicles and discussions have taken place on the subject of health of drivers as it may affect their ability to drive safely. Contact was also made with the Commissioner of Mental Hygiene with particular relation to paroled mental cases.  
Complete accord has been reached regarding recommendations made to the Motor Vehicle Department of the State in connection with licenses to be issued. All persons applying for an operator's license or renewal of such license must sign a certificate as to whether or not they

other chapters of the law, such as subdivision 4, Section 10-a of the Labor Law

A legislative conference in the Department of Labor, in which this Bureau is included, has under advisement an amendment to Section 13-d(2)c which now reads "has failed to submit full and truthful medical reports required to be made by him to the commissioner, or the industrial board" It is the purpose of the Commissioner to have power to penalize a physician who persistently *refuses* to file reports with the labor department (see above)

**Podiatry**—From time to time, persons who have been licensed by the state to perform limited functions such as optometry, physical therapy, podiatry, etc., have pressed for independent functions under the education laws of this state. These limited practitioners have, from time to time, attempted to obtain independent authority to treat persons coming within their so-called fields. It has always been the opinion of the organized profession that the primary interest should be the welfare of the citizen. It would not be in the best interests of the public to allow such limited practitioners who are not fully qualified to diagnose medical conditions, and to have independent authority in the treatment of patients. This applies with great force to the Workmen's Compensation Law. Under the provisions of Section 13-b(c), certain limited scope is given to physical therapists and other technicians under the direct and personal supervision of qualified and authorized physicians to treat injured workmen within the range of the licensed practitioner's authority. To permit such practitioners to enter into the practice of accepting cases for treatment without the active supervision of a licensed and qualified medical practitioner is fraught with great danger. An attempt was made this year by podiatrists to obtain the same authority to diagnose and treat foot injuries as is now given under the Workmen's Compensation Law to practitioners of medicine. Aside from the material aspects involved, it would not be in the interests of the injured workman should such partially trained practitioners be allowed to assume independent status in the diagnosis and treatment of injured workmen. It is strongly recommended that any and all attempts to permit partially trained practitioners to practice under the Workmen's Compensation Law be combated for the reasons mentioned above.

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**Memorial to Dr. Guy S. Carpenter**—The Council adopted the following memorial:

"Dr. Guy S. Carpenter, of Waverly, New York, member of the Council of the Medical Society of the State of New York, died August 28, 1940, age sixty-six.

"His life exemplified the beauty and value of the simple homely virtues. The eminence he attained was out of all proportion to the radius of his professional activities. Honesty, fairness, kindness, devotion to duty, sound judgment, were so marked in him that the knowledge of his

worth went far beyond the small community in which his life was spent, so that he was called to important responsibilities with the State Society of his profession.

"Dr. Carpenter has served as vice-president, and as counselor of the Medical Society of the State of New York, being the Chairman of its Committee on Publicity for the past three years. He was a past-president of the Tioga County Medical Society and for thirty-three years had served as Waverly Village Health Officer. He was a delegate to the American Medical Association, a member of the New York Sanitary Officers' Association, of the American Association of Anaesthetists, of the Eastern Anaesthetists, and the American Public Health Association.

"Though no greater tribute to his character could be offered than that given by his fellow practitioners, yet the esteem of his neighbors in the intimate community which found his daily life as open as a book, must serve as a living memorial to the widow and brother who go the rest of the way without him.

"*'Beloved Physician,'* said the *Waverly Sun* in commenting on his death. 'A genial gentleman, who has not only numbered his friends by the legion, but who has been outstanding in humanitarian and community welfare work in this valley for two score years. He had practiced medicine in Waverly since his graduation from Cornell Medical College in 1899. During these forty-one years he has brought hundreds of the present residents of this valley into the world, has brought back countless others from the brink of the grave, and has eased the passing of many more whose time on earth was done.'

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**Nominations**—On request of the State Board of Examiners of Nurses, the Council nominated Dr. Peter Irving to succeed Dr. Nathan B. Van

"I have a report from Mr. Bienstock stating that from January 1, 1940, to date, 29 cases of illegal practice of medicine have been prosecuted and concluded in the courts. There are, in addition, 14 other cases pending in the courts. Besides this, Mr. Mangan reports to me that he has in process of preparation as of the first of October 20 cases. You understand, of course, that all complaints of illegal practice or of other procedures subject to criminal action are handled first in Mr. Mangan's office. Under his direction the evidence is secured by the medical investigators and the case prepared for submission to the Attorney General. The latter conducts the legal proceedings from that point on. I assume also that you understand that the Department proceeds only on the basis of information which comes to it through complainants. We do not and cannot make independent surveys to uncover violations of the law."

Assurance was given that a report would be made regarding this work by the Department each year in future.

**Eichacker vs. New York Telephone Company** — At the time of your last meeting the status of this case was that the Telephone Company had appealed a decision in favor of Dr. Henry C. Eichacker, also, the Society had agreed, if formally requested, to take over defense of the appeal through its own attorney. No such formal request was made.

During the summer the appeal was decided adversely to Dr. Eichacker. The Secretary authorized the doctor's attorney to file notice of further appeal by Dr. Eichacker to come up in the fall when the Council would be in a position to decide on what position it would see fit to assume in regard to the further appeal. The Council approved this action of the Secretary and, after full discussion, finally gave authority to Mr. Brosnan, the Society's legal counsel, to intervene in the appeal as *amicus curiae*. This Mr. Brosnan did in due course, and the court granted the application for intervention. The appeal is at this time (March 15, 1941) still pending.

**Basic Science Law** — At your last meeting you discussed a possible Basic Science Law which had been proposed for New York State by resolu-

tion introduced by Dr. Charles Gullo of Livingston County. You referred this matter to the Council for further study.

Your Council discussed this matter fully and arrived at the conclusion that it is best to leave the situation in New York State in this regard as it stands at present rather than to foster the introduction of a Basic Science Law.

## PART XII

### State Society Assessment and Military Service

The Council has received many queries from the component county medical societies as to relief from payment of State Society assessments for members called into military service. In reply, the Council has stated that it did not have authority to remit assessments except as provided in the Bylaws for illness, and that therefore the matter would be brought to the attention of the House of Delegates.

The Council did go on record with an opinion that the relief from assessment for the calendar year 1940 should not be in question because those assessments should have been paid by May 31, 1940, which was before the passage of the Selective Service Act. In regard to the State Society assessment for 1941, however, the Council begs to present the following resolution.

*"Be it resolved by the House of Delegates of the Medical Society of the State of New York assembled in annual meeting at Buffalo, New York, on April 28, 1941, that the annual per capita assessment on members of the component county medical societies shall remain as at present, namely, ten dollars per annum, and*

*"Be it further resolved that, on the request of any component county medical society, the annual assessment on any of its members temporarily on active duty in the military or naval service of the United States may be remitted by the Council in full or in part during the period of such service."*

Respectfully submitted,  
PETER IRVING, M.D., Secretary

March 15, 1941

## Report of the Treasurer

To the House of Delegates, Gentlemen:

The accompanying financial statement is abstracted from the auditors' report for the calendar year 1940. A more complete analysis of the Society's financial affairs will be pre-

sented by your Treasurer at the Annual Meeting. Respectfully submitted,

GEORGE W. KOSMAK, M.D., Treasurer

March 6, 1941

## AUDITORS' STATEMENT

We have completed our examination of the books and records of the Medical Society of the State of New York for the year ended December 31, 1940, have reviewed the system of internal control and the accounting procedures of the Society, and have examined or tested accounting records of the Society and other supporting evidence by methods, at times, and to the extent we deemed appropriate.

In our opinion, the accompanying balance sheet and related statements of income and capital present fairly the position of the Society at December 31, 1940, and the results of its operations for the year ended that date.

Respectfully submitted,  
J. K. LASSER & Co.,  
Certified Public Accountants

February 28, 1941

are suffering from or have ever suffered from any of the following

Insanity	Hypertension
Epilepsy	Nephritis
Coronary Thrombosis	Drug Habit
Angina Pectoris	Physical Deformities
Diabetes	Loss of an Extremity or Part of an Extremity

No license will be issued to a known epileptic

As regards insanity, the Commissioner contemplates legislation which will require that the license of a person committed to a mental hygiene hospital shall be taken up and transmitted to the Motor Vehicle Department, same to be returned to the individual only on certificate of competent examining physician

Persons suffering from heart disease and nephritis are to be issued licenses only after examination and certificate from examining physician. Diabetics must furnish certificate that constant care is being supervised. No licenses are to be issued to drug addicts

In the case of physical deformities, persons must demonstrate to the satisfaction of the Bureau of Motor Vehicles that they are not incapacitated from driving under such restrictions

It has been recommended that all persons over seventy should have a physical examination before license is issued

Regarding drunken drivers, tests are now available to determine alcoholic content in the blood and legislation is contemplated which will permit such tests to be made where accidents have occurred. The medical profession has not as yet passed upon the proposed tests, but at least two other states have incorporated them in their restrictions

It is the opinion of the Committee that in many instances of diseased conditions known to physicians and not reported as such to the Motor Vehicle Department the individuals could be discouraged by their physicians from asking or soliciting motor vehicle licenses. Very cooperative action has been taken to prevent the increasing number of accidents in this state, and it is hoped that by incorporating the suggestions made a lessening may be possible

**Deaf and Hard of Hearing**—The Deaf and Hard of Hearing Committee (Dr Hambrook) has cooperated during the year with the State Commission for the Deaf and Hard of Hearing

Due to the fact that many children are unable, because of hearing defects, to acquire satisfactory education in their regular school classes, legislation has been sought to have lipreading instruction, voice training, and other hearing aids necessary to enable such children to acquire the education so necessary for proper success in after life

A survey has been made as to the number of such children who would be benefited by lipreading instruction, and a fair estimate of about 70,000 in the state has been made. If and when this legislation is enacted it will mean that at least 20 per cent of the pupils attending deaf schools in the state will be returned to their regular school classes. These have been in deaf schools because no satisfactory means has been available for education in the regular schools

The Committee, in cooperation with the State Commission for the Deaf and Hard of Hearing,

has recommended to the Legislature of the State of New York and to Governor Lehmann that the Commission be continued to enable them to complete a study being made of the deaf and hard of hearing adults with special skills and available in industry for replacements during the crisis in medical preparedness

Attention has also been directed to Civil Service laws and regulations regarding the deaf and hard of hearing and to more rational ratings in compensation cases. A special study of this phase of the work has been made by Dr Edmund Prince Fowler of New York, an eminent otolaryngologist and a member of both the State Medical Society and the State Commission for the Deaf and Hard of Hearing

The early recognition of hard of hearing cases, the elimination—in so far as possible—of the causative factors, the prompt and efficient treatment of cases when discovered, and the complete and proper education of the handicapped hearing individual have been given serious consideration by this Committee. The two laws now on the statutes, viz the reporting of all deaf and hard of hearing children, and the annual examination of hearing of all children in the schools of the State, will make possible early discovery. Correct and efficient treatment should follow this discovery. Lipreading instruction, voice culture and other hearing aids required for specific cases will make possible the type of education so necessary

The adult deaf and hard of hearing have been given serious consideration. Questions pertaining to Civil Service, labor preferment and placement, rehabilitation and re-education, especially in skilled industry, have all been dealt with by the combined efforts of the State Commission for the Deaf and Hard of Hearing and the Committee of the Medical Society of the State of New York.

Civil Service rules and regulations are naturally very rigid and the applicant is subject to exacting mental and physical examinations. Those with the handicap of deafness, consequently, find themselves practically excluded from this field, but the tendency in recent years, both in Federal Government and in State Government, has been to modify arbitrary and rigid rules and thus enable the otherwise qualified deaf and hard of hearing persons to compete with others for governmental positions

The right of the deaf and hard of hearing to drive motor vehicles has also been considered, and a review of the instances of accidents proves a very small proportion of accidents caused by deaf or hard of hearing drivers. No one who has given serious thought to the subject will deny the truth of these assertions. The deaf or hard of hearing drivers are of necessity more careful and cautious and, unless other handicaps are associated or individual cases are of such severity, it is the opinion of the combined group that they (the deaf or hard of hearing) should not be excluded from licensure

**Medical Practice Act Enforcement**—Through Dr Hambrook's Committee a request for information was proffered as to enforcement of the Medical Practice Act by the Department of Education. A letter was received under date of October 15, 1940, from Associate Commissioner Milton E. Loomis

CASH IN BANKS AND ON HAND  
December 31, 1940

	Regular Funds	Investment Funds	Total
CHECKING ACCOUNTS			
Guaranty Trust Company	\$22,504.93		\$22,504.93
National City Bank of New York	4,971.84		4,971.84
The Chase National Bank	1,303.51	\$ 573.23	1,876.74
	<u>\$28,780.28</u>	<u>\$ 573.23</u>	<u>\$29,353.51</u>
SAVINGS ACCOUNTS	\$24,256.81	\$39,534.37	\$63,791.18
PETTY CASH FUNDS—OFFICE	\$ 400.00		400.00
TOTAL	<u>\$53,437.09</u>	<u>\$40,107.60</u>	<u>\$93,544.69</u>

PRIZE FUNDS

	On Deposit Union Dime Savings Bank
Lucien Howe Prize Fund	\$1,510.34
Merritt H. Cash Prize Fund	713.25
A. W. Suter Lectureship Fund	673.95
TOTAL	<u>\$2,897.54</u>

SECURITIES

The investments of the Society (General Fund) may be summarized as follows

	At Cost
Bonds and Mortgages	\$130,988.29
Stocks	<u>134,884.09</u>
TOTAL	<u>\$265,872.38</u>

All of these securities are in the possession of the Chase National Bank as Custodian for the Trustees of the Medical Society of the State of New York.

CONDENSED STATEMENT OF OPERATING INCOME AND OPERATING EXPENSES  
FOR THE YEAR ENDED DECEMBER 31, 1940

OPERATING INCOME		
Members Dues—1940		\$169,150.00
1939		8,664.00
1938		250.00
Arrears		<u>1,084.00</u>
	Total	\$179,148.00
OPERATING EXPENSES		
Administrative Expenses	\$51,215.26	
Net Cost of 1939-1940 <i>Directory</i> (\$1.15 per member)	20,010.40	
Cost of Public Relations Department	15,894.13	
Legislative Expenses	16,064.55	
Net Cost of JOURNALS (\$0.91 per member)	15,391.32	
Counsel Retainer Fees and Expenses	12,321.02	
Traveling Expenses	9,598.74	
Workmen's Compensation Bureau Expenses	9,017.89	
Scientific Activities Expenses	5,108.58	
Pension to Retired Office Manager	3,000.00	
Moving Expenses	983.40	
District Branch Executive Committee Meetings Expense	<u>1,560.49</u>	<u>160,165.78</u>
EXCESS OF OPERATING INCOME OVER OPERATING EXPENSES		<u>\$ 18,982.22</u>

# Balance Sheet—December 31, 1940

## ASSETS

### GENERAL FUND

#### CURRENT ASSETS

Cash in banks and on hand		\$ 93,544 60
Accounts Receivable—Advertisers	\$ 2,448 40	
Others	49 60	
	<hr/>	
	\$ 2,498 00	
Less Reserve for Doubtful Accounts	679 68	1,818 32
	<hr/>	
		12,374 00
Dues Receivable—Estimated		
Securities—		
At Market Value (Cost \$265,872 38)	\$224,458 81	
Accrued Interest Receivable	2,834 82	227,293 63
	<hr/>	
Inventories—At Cost		
Paper Stock	\$ 3,199 94	
Stationery and supplies	84 00	3,283 94
	<hr/>	
		\$338,314 58

#### OTHER ASSETS

Medical Directories on Hand—At Cost		2,919 53
Pamphlets on Hand— <i>On the Witness Stand</i> , Net Cost of Sales		605 50
1941 Annual Meeting Expense—Net Balance on 1940 Meeting		1,099 74
FURNITURE AND FIXTURES		
Nominal Value		2 00
		<hr/>
		\$342,941 35

### ENDOWMENT FUNDS

CASH IN BANKS		\$ 2,897 54
SECURITIES		
At Market Value (Cost \$5,808 75)	\$ 4,665 00	
Accrued Interest Receivable	27 09	4,692 09
	<hr/>	
		\$ 7,589 63
		<hr/>
		\$350,530 98

### TOTAL ASSETS

## LIABILITIES AND CAPITAL

### GENERAL FUND

#### CURRENT LIABILITIES

Accounts Payable—		
Paper for JOURNAL	\$ 3,034 10	
Office Expenses, Supplies, etc	1,089 27	\$ 4,123 37
	<hr/>	
		580 52
Commissions Payable—Advertising & Directory Sales		762 96
Taxes Payable—Social Security & Unemployment Insurance		
		<hr/>
		\$ 5,466 85

#### DEFERRED INCOME

Prepaid Subscriptions to JOURNAL		1,047 48
Prepaid 1941 Membership Dues		2,530 00
Prepaid Advertising in 1941 <i>Directory</i> —Net Advance Commissions and Other Expenses		334 92
		<hr/>
		333,562 10
CAPITAL—(page 744)		
		<hr/>
		\$342,941 35

### ENDOWMENT FUNDS

#### CAPITAL

Lucien Howe Prize Fund		\$ 3,818 26
Merritt H Cash Prize Fund		1,829 09
A W Suter Lectureship Fund		1,942 25
		<hr/>
		\$ 7,589 63
		<hr/>
		\$350,530 95

### TOTAL LIABILITIES AND CAPITAL

## REPORT OF THE COUNSEL

## Report of the Counsel

To the House of Delegates, Gentlemen

Your Counsel herewith submits his report of the activities of the Legal Department of the Medical Society of the State of New York for the period from February 1, 1940, to and including January 31, 1941.

Within the reasonable confines of a report of this character nothing but the barest outline of the work done in our department can be given. Conclusions only can be stated, but these do not give any adequate picture of the work done or the responsibility assumed by our department.

As in other years we again record our appreciation for the assistance and cooperation furnished by your officers and your committeemen. It has indeed been a pleasure to work with them.

In making his report, your Counsel adheres to the convenient category employed in previous years whereby his activities have been divided into three main divisions: (a) the actual handling of malpractice actions before courts and juries and in the appellate tribunals, (b) counsel work with officers, committees, and individual members of the Society, and (c) legislative advice and activities.

**Litigation.** We again call to the attention of the members the dangers done by careless, hasty, and unjustified criticism by one physician of the work of another. Of course, we realize that in most instances the criticizing doctor does not intend that the patient shall commence a malpractice action based on his comment, but it is equally true that in these parlous times not much is needed to plant in the mind of a patient the seed of litigation against another physician. It is a fact, although not always susceptible of proof, that many malpractice actions stem from just such criticism.

It is pertinent at this point to call to the attention of the members of your Society, as we have done in previous years, the ever-present hazard of a malpractice action to the practicing physician. It further should be noted that the rights of the physicians in malpractice actions are in the hands of lay jurors, who, at times, are unduly influenced by sympathy, passion, prejudice, or bias. It was the recognition of these factors that many years ago led the State Society to initiate a group plan of malpractice insurance. For a period of nearly twenty years this plan has been in operation. It was recognized at the outset that a union of defense and indemnity was essential to the success of the Group Plan. The outstanding success of this plan is a matter of record.

The Group Plan is one of the most important activities of your Society, and it deserves the loyal support of every member. We should have more insured members in the Society than we now have. We have heard many expressions of regret voiced by uninsured members who have been sued over their failure to take advantage of your Group Plan.

At this point we should make mention of the fine spirit of cooperation displayed by everyone connected with the Yorkshire Indemnity Company, the carrier under your Group Plan. Now entering their sixth year as such carrier, they have lived up in every way to all of the obligations assumed and, in addition, have shown

themselves to be genuinely and enthusiastically interested in assisting us in every way to make the Group Plan successful. We record our appreciation of the cooperation furnished by Mr. Horace Crowell, Jr., claim agent of the Yorkshire Indemnity Company, with whom your Counsel and office staff are in almost daily conference and consultation.

We should also make mention of the splendid work of your Insurance Committee headed by Dr. Clarence G. Bandler and Mr. Harry F. Wansing, your authorized insurance indemnity representative. With these gentlemen your Counsel has conferred on a number of occasions during the reporting period.

For the past decade appreciation has been expressed in my report for the splendid work of my associates, Mr. William F. Martin and Mr. Thomas H. Clearwater, the attorney for the Society. I do so again this year. Mr. Martin's reputation in the defense of malpractice actions is well and favorably known throughout the entire state. In the thirteen years he has been engaged in this work he has come to grips in a practical way with every sort of medicolegal problem. His experiences in this field have won for him expressions of the highest approval from judges, lawyers, and doctors in all parts of the state, not only for his exceptional ability as an advocate but for his fine personal qualities as well.

Mr. Thomas H. Clearwater, the attorney for your Society, has had close contact over many years with the members and with its officers and committeemen. Mr. Clearwater is a gentleman of exceptional ability and character, and he has rendered to your Counsel at all times the fullest measure of cooperation and support.

We cannot leave this subject without paying tribute to the splendid spirit of industry, loyalty, and devotion manifested by your Counsel's entire staff, both legal and clerical.

With this preliminary statement, we note that there were commenced in the present reporting period 131 cases as against 170 last year. These figures, of course, do not include a number of claims outstanding on which suit may ultimately be brought. Of equal importance with the actual work of litigation is the preventative work done by your Counsel and his office staff. Throughout the year we are in consultation with many claimants and their attorneys, and frequently we have been successful in demonstrating to them in fact and in law that no valid claim exists. Thus these claims never reach a suit stage.

Table 1 shows that during the present reporting period we disposed of 145 cases as against 191 disposed of during the previous reporting period. Forty of these cases were settled, and, of the balance, 103 were successfully terminated in favor of the physicians. Two cases resulted in judgments in favor of the plaintiff as opposed to three verdicts for plaintiffs in the prior reporting period. We note from Table 1 that there were pending cases pending on January 31, 1941, 406 cases as against 420 on January 31, 1940.

Table 2 gives a comparison of the number of members insured in 1938, 1939, 1940, and 1941, the number of members in the county societies,

# ANALYSIS OF FINANCIAL INCOME, EXPENSE, AND CAPITAL FOR THE YEAR ENDED DECEMBER 31, 1940

	General Fund	Recouping Fund	Lucien Howe Prize Fund	Merritt H Cash Prize Fund	A. W Suter Lecture- ship Fund
JANUARY 1, 1940, BALANCE—CAPITAL	\$297,990 83	\$14,305 97	\$3,801 23	\$1,856 46	\$1,830 14
Additions—					
Excess of Operating Income over Operating Expenses	18,982 22				
Transferred from Recouping Fund upon Treasurer's Instructions	14,349 90				
Interest on Bank Balances	963 75	11 53	27 03	12 63	9 29
Income from Securities	10,991 42	184 90	102 50	35 00	100 00
Additional Income from Estate					152 85
	<u>\$343,278 12</u>	<u>\$14,502 40</u>	<u>\$3,930 76</u>	<u>\$1,904 09</u>	<u>\$2,092 28</u>
Deductions—					
Depreciation or Appreciation in Mar- ket Value of Securities Owned	\$ 8,453 18	\$ 152 50	\$ 12 50	\$ 25 00	\$ 100 00
Loss on Sale of Securities	715 79				
Custodian and Investment Service Fees	547 05				
Transferred to General Fund upon Treasurer's Instructions		14,349 90			
Prize Awards			100 00	100 00	50 00
	<u>\$ 9,716 02</u>	<u>\$14,502 40</u>	<u>\$ 112 50</u>	<u>\$ 75 00</u>	<u>\$ 150 00</u>
DECEMBER 31, 1940, BALANCE—CAPITAL	<u>\$333,562 10</u>		<u>\$3,818 26</u>	<u>\$1,829 09</u>	<u>\$1,942 28</u>

## Report of the Board of Trustees

To the House of Delegates, Gentlemen

I have the honor to report for the Board of Trustees on its supervision of the financial affairs of the Society during the past fiscal year.

It has carried out the following routine duties: Contracts with the General Manager and Executive Officer were renewed, as were contracts with Mr. Kent Lighty for securing advertisements for the *JOURNAL* and *Directory* and for sale of technical exhibit space for the 1941 Annual Meeting. Lease of the Albany office has been renewed for three years at the same terms, to begin in April, 1941. The budget for the fiscal year 1940-1941 was adopted as recommended by the Council. Later in the year the Board adopted a tentative budget for the calendar year 1941, subject to the action of the House of Delegates on the amendment changing the fiscal year to correspond with the calendar year and the dues year. Following the move of the New York office certain additional appropriations for moving expenses were needed and were approved.

On recommendation of the Council, the Board approved a change of auditors, it being understood that the new auditors, J. K. Lasser & Company, would make a more comprehensive audit of the books of the Society than had been done

in previous years. In this connection the Board approved the setting up of a new bookkeeping system suggested by the auditors and approved by the Treasurer.

On recommendation of the Council, the Board approved additional appropriations for medical preparedness, and also for studies of compilation system for the *Directory* and the Society's files.

The main concern of the Board throughout the year has been the study of investments. In this connection it has had the continuous advice of the Chase National Bank. Where it has seemed wise to dispose of any investments, the Board has, in accordance with advice, preferred to keep the money in the form of cash in savings banks.

In general, the Board is glad to report that the financial condition of the Society is sound, that it has continued to live within its income from dues without curtailing its activities.

Respectfully submitted,  
JAMES F. ROONEY, M.D.  
GEORGE W. COTTIS, M.D.  
WILLIAM H. ROSS, M.D.  
THOMAS M. BRENNAN, M.D.  
HARRY R. TRICK, M.D., *Chairman*

March 12, 1941

TABLE 2—COMPARISON OF THE NUMBER OF MEMBERS INSURED IN 1938, 1939, 1940 AND 1941 AND THE NUMBERS OF MEMBERS IN THE COUNTY SOCIETIES AND THE PERCENTAGE OF INSURED MEMBERS\*

	1938			1939			1940			1941		
	A	B	C	A	B	C	A	B	C	A	B	C
Albany	283	159	56	298	166	56	301	182	60	304	186	61
Allegany	31	12	40	33	12	36	38	14	37	40	14	35
Bronx	1,238	500	40	1,324	503	37	1,364	512	38	1,405	538	38
Broome	191	100	52	219	98	45	194	101	52	201	99	44
Cattaraugus	59	29	49	63	29	46	62	33	53	64	30	47
Cayuga	61	44	72	63	45	71	70	46	66	70	46	66
Chautauqua	96	57	60	103	58	54	101	57	56	102	58	57
Chemung	74	43	58	83	50	60	86	52	60	89	57	64
Chenango	32	17	53	37	20	54	35	19	54	36	21	58
Clinton	35	24	69	37	22	60	40	26	65	46	26	57
Columbia	36	9	25	35	8	21	41	10	24	41	10	24
Cortland	29	16	35	28	12	43	29	11	38	35	14	40
Delaware	30	16	53	28	17	61	30	16	53	35	18	51
Dutchess	172	25	15	174	30	17	183	36	20	182	37	20
Erie	857	298	35	894	305	34	895	328	37	898	348	39
Essex	28	13	46	29	13	45	26	15	55	32	13	41
Franklin	53	24	45	60	21	35	63	29	46	60	29	46
Fulton	52	29	58	54	34	63	55	32	68	55	34	62
Genesee	34	17	50	35	20	57	37	21	57	42	25	60
Greene	33	21	64	34	19	56	34	20	59	33	20	61
Herkimer	41	32	80	52	33	63	52	35	67	56	26	46
Jefferson	94	55	58	94	47	50	92	50	54	93	52	56
Kings	2,674	1,169	43	2,814	1,160	41	2,867	1,184	41	2,925	1,218	42
Lewis	15	10	67	16	8	50	14	7	50	20	9	45
Livingston	46	15	33	47	12	26	48	14	29	45	13	29
Madison	39	17	43	41	17	41	43	21	49	45	21	47
Monroe	473	255	54	508	257	51	521	263	50	533	266	48
Montgomery	55	13	24	57	12	21	60	13	22	60	14	23
Nassau	348	205	59	378	218	58	404	236	58	451	257	57
New York	4,716	2,479	54	4,980	2,467	50	5,103	2,535	50	5,242	2,651	51
Niagara	124	58	47	134	59	44	136	64	47	145	66	46
Oneida	211	107	51	232	105	45	240	115	51	244	115	47
Onondaga	365	209	57	383	209	55	402	220	55	407	223	55
Ontario	86	41	48	89	39	44	81	37	48	83	38	46
Orange	155	100	65	149	95	64	163	99	61	173	104	60
Orleans	21	6	29	22	8	23	24	8	33	24	8	33
Oswego	49	33	67	56	36	64	52	32	62	52	34	65
Putnam	53	30	57	63	27	43	64	35	55	65	34	52
Rensselaer	16	6	40	15	6	40	16	5	31	15	6	40
Queens	839	401	48	901	425	46	990	463	47	1,044	530	51
Schenectady	119	55	46	129	59	46	132	67	51	132	72	55
Richmond	122	46	38	132	47	36	134	52	39	133	57	43
Rockland	77	24	44	83	33	40	91	36	40	99	38	38
St. Lawrence	87	28	42	73	27	37	75	29	39	80	30	38
Saratoga	66	39	60	71	38	53	70	36	51	66	36	55
Schenectady	137	84	61	145	87	60	151	82	54	156	81	52
Schoharie	18	12	72	19	14	74	21	16	76	19	16	84
Schuyler	10	2	20	12	2	17	12	2	17	11	2	18
Seneca	29	12	41	31	12	39	28	12	43	28	11	39
Stenben	74	46	62	81	48	59	81	47	58	80	47	59
Suffolk	203	103	51	223	109	49	227	114	50	236	119	51
Sullivan	48	31	67	47	26	65	54	24	44	53	25	47
Tioga	28	12	43	30	12	40	32	13	41	30	12	40
Tompkins	64	33	52	70	36	51	73	34	47	75	36	48
Ulster	81	27	33	79	25	32	80	28	35	90	30	33
Warren	58	27	47	63	27	43	64	28	44	64	29	45
Washington	40	15	38	41	15	37	40	15	38	46	17	37
Wayne	56	24	43	57	24	42	63	28	44	64	31	48
Westchester	808	365	60	840	370	58	853	392	57	711	409	58
Wyoming	30	12	40	32	14	44	32	14	44	32	14	44
Yates	20	17	85	22	14	64	24	16	67	26	17	65
	15,799	7,710	49	16,743	7,756	46	17,224	8,081	47	17,743	8,437	48

\* A—number of members in county society, B—number of members insured C—percentage insured.

physician and patient would give rise to a cause of action for damages.

14. Inquiry as to legality and advisability of certain plans whereby a committee of physicians, acting with the welfare commissioner, should have a part in the administration of medical care in relief cases.

15. Inquiry from a physician as to ethical questions in connection with his becoming involved in a personal injury action.

16. Request for a form of release to be signed by a patient leaving a hospital against advice of her physician.

17. An inquiry as to the extent to which a board of education may inspect the medical records of pupils kept by a school physician.

18. Inquiry from a physician, chief-of-staff at

a hospital, for information concerning his legal responsibility for the acts of other physicians serving on the hospital staff.

19. Requests from a plastic surgeon for a special form of operative consent to guard against actions based upon breach of contract or warranty.

20. Inquiry as to whether information of a confidential nature may be revealed to an agency of the Federal Government.

21. Inquiry from a hospital superintendent as to what cases require a husband's consent to an operation upon his wife, and with respect to the nature of consent required in cases of minors.

22. Inquiry concerning the right of a physician to testify in another state, at a defendant's request, regarding matters discovered and treat-

TABLE 1 — COMPARISON OF THE NUMBER OF SUITS INSTITUTED AND DISPOSED OF IN 1939-1940 AND 1940-1941

	Instituted		Disposed of	
	1939-1940 (12 months)	1940-1941 (12 months)	1939-1940 (12 months)	1940-1941 (12 months)
1 Fractures, etc	16	14	14	13
2 Obstetrics, etc	11	13	15	16
3 Amputations	3		1	2
4 Burns, x-rays, etc	19	19	32	20
5 Operations—abdominal, eye, tonsil, ear, etc.	49	35	52	41
6 Needles breaking	2	3	3	2
7 Infections	16	10	10	16
8 Eye infections	4	4	2	2
9 Diagnosis	24	10	22	12
10 Lunacy commitments	2		3	
11 Unclassified—medical	24	23	37	21
Totals	170	181	191	145
<i>Further Comparisons</i>				
Actions for death	15	9	22	13
Infants' actions	16	9	20	9
Totals	31	18	42	22
<i>How Disposed of</i>				
Settled			50	40
Judgment for defendant			188	103
Judgment for plaintiff			3	2
Totals			191	145
Pending on January 31, 1940	420			
Pending on January 31, 1941	406			

and the percentage of insured members in the county societies and in the entire State Society

Counsel Work. During the period of this report your Counsel prepared for the Society's JOURNAL articles in the nature of editorial comment. These articles have included the following:

Malpractice—Sufficiency of Evidence, Disciplinary Proceedings—Effect of Pardon, Negligence—Injuries to Nursing Infant, Physical Examinations in Personal Injury Actions, Label of a Physician, Quackery as Grounds for Disciplinary Action Against Physician, Liability of Hospital for Negligence of Nurse, Charitable Hospitals—Liability for Malpractice of Physician

Your Counsel has also digested reports of cases concerning malpractice actions held to be of interest to the members of the medical profession. From time to time during the reporting period, these case reports appeared in the JOURNAL and included the following:

Treatment of Fractured Leg, X-Ray Treatment of Malignancy, Fistula Following Delivery, Plastic Surgery of the Face, Alleged Erroneous Diagnosis of Tuberculosis, Complications Following Appendectomy

Your Counsel is pleased to learn from the members of your Society, from time to time, that they enjoy reading these reports and articles and that they find them to be interesting and instructive.

Inquiries. In addition to his other duties your Counsel receives frequent requests for opinions, orally and in writing, on various topics. Some of the matters upon which advice has been given (in writing) are the following:

1 Inquiry from a physician as to the individual liability of a hospital intern when sued for malpractice and further as to whether the hospital would be liable for any judgment obtained against the intern

2 Query as to whether a privately owned hospital has an absolute right to determine what doctors should be members of its staff, or allowed

to perform major surgery, and to make rules and regulations to govern the conduct of the staff

3 Request for advice as to the necessity of advising a patient that a broken surgical needle remained within his finger

4 Several requests for advice as to the extent to which a physician may testify in Court as to the physical condition of a patient without violating the Statute with respect to confidential communications.

5 Inquiry by a medical director of a publicly owned and operated institution as to the possibility of his becoming involved in a malpractice action and the possible results of such action.

6 Inquiry as to the possible personal liability in cases of anesthesia accidents of a physician associated with a hospital as its superintendent

7 Request for information as to the extent a physician may be required to give expert testimony when compelled to attend Court on an ordinary subpoena.

8 Inquiry as to whether a county welfare commissioner has the proper power to limit the earnings of physicians to a stated amount for any calendar year and for any one month

9 Request for advice as to whether a physician who has some years before treated a patient is disqualified from examining the same patient upon Court order in the course of litigation involving that patient.

10 Request for opinion as to whether a duly licensed practicing physician is entitled legally to change his name without a court order

11 Inquiry regarding legal responsibility that might be incurred by a group of physicians serving as an advisory medical board to a hospital.

12 Request for advice with respect to whether an elderly patient should be told after an operation that there was a possibility, though not a certainty, that a sponge was left in his abdomen

13 Inquiry from a physician as to whether a breach of the confidential relationship between

E Duties of Officers

F Jurisdiction of Board of Censors

### Amendments

#### A Change of Dues Year and Fiscal Year

This has to do with change of the Dues Year and Fiscal Year so that both shall coincide with the Calendar Year. Previous to 1939 the Dues Year had been the Calendar Year while the Fiscal Year had begun July 1 and ended June 30 of the succeeding year. In 1939, the House of Delegates had retained the Fiscal Year from July 1 to June 30, but changed the Dues Year to coincide with the Fiscal Year. Because this was found impractical, particularly as related to the change in the Dues Year, the Council submitted an amendment in 1940 so that both Dues Year and Fiscal Year shall hereafter coincide with the Calendar Year, as follows:

*Chapter I—Board of Trustees, Section 2—*Change last sentence by deleting word "July 1," and "June 30 of the following year," and inserting the words "January 1" and "December 31 of each calendar year" making it read:

"The fiscal year shall begin January 1 and end December 31 of each calendar year."

*Chapter I—Membership, Section 2—*Change (a), last sentence, by deleting the words "July 1 to June 30 of the following year," and inserting the words "January 1 to December 31 of each year," making it read:

"The dues year shall coincide with the fiscal year, January 1 to December 31 of each year."

*Chapter I—Section 2—*Change (b), first sentence, by deleting the words "December 31," and inserting the words "May 31" making it read:

"A member whose dues and assessments are unpaid after May 31 of any current year is not in good standing."

Change (c) by deleting the words "June 30," and inserting the words "December 31" making it read:

"A member whose dues and assessments are unpaid after December 31 of any current year shall automatically be dropped from the rolls of membership of both county and state societies, without notice to such member by."

Delete (d), which now reads: "The change of the dues year shall first become operative."

Change (e) by deleting the words "May 1," and "Ensuing fiscal" and inserting the words "November 1," and "succeeding," making it read:

"Dues and State assessment of a member elected or reinstated after November 1 shall be credited to the succeeding year, all rights and privileges of membership, however, dating from the time of election."

#### B Amendment of Previous Amendment

This was notice that the Medical Society of the County of Kings had resolved to amend the preceding amendment, *Chapter I, Section 2 (e)*, to make that portion read:

"Dues and State assessment of a member elected or reinstated after October 1 shall be credited to the succeeding year, all rights and privileges of membership, however, dating from the time of election."

#### C. Rearrangements of Sessions of the House of Delegates

This amendment was presented to the 1940 House of Delegates by Dr. Peter Irving, General Manager, reading as follows:

*Chapter III, Section 4*, the first sentence shall be altered by the substitution of the words "last day" for the words "second day" making the first sentence of Section 4 read:

"The first order of business on the last day of the session of the House of Delegates of each annual meeting shall be the nomination for officers of the Society and other members of the Council, a member of the Board of Trustees, delegates to the American Medical Association, and the appointment of a sufficient number of tellers by the Speaker."

The House instructed the Council to reword this amendment in order to clarify its meaning. This the Council has done, at the same time taking cognizance of notice of an amendment by Dr. Arthur J. Bedell that would add a new Section to Chapter II of the Constitution to the effect that:

"No new resolution may be presented on the last day of session of the House of Delegates without a two-thirds affirmative vote."

These two amendments have been fitted together by the Council with the full approval of Dr. Bedell, and the result follows:

*Chapter II, Section 3*, add three additional sentences, instead of adding a new section, to read:

"At least thirty (30) days before the Annual Meeting of the House of Delegates, the Speaker shall announce a schedule of the adjourned sessions of the House of Delegates. This schedule may be amended by the House of Delegates during its convention. No new resolution shall be introduced at the last scheduled session except by a two-thirds vote of the House."

*Chapter III, Section 1*, to effect the purpose of the amendment to Chapter III, Section 4, it was found necessary to change the first sentence of this Section by deleting the words "second day's," and inserting the words "last scheduled," making it read:

"The Officers, members of the Council and of the Board of Trustees of the Society, and the Delegates to the American Medical Association shall be elected as the first business of the last scheduled session of the annual meeting of the House of Delegates."

ment rendered to a plaintiff at a time when she had been his patient

23 Inquiry concerning the rights of one physician to reveal to another physician confidential matters concerning a patient

24 Request for various forms of consents to operations, and for forms of release for use when patient leaves hospital against his physician's advice

25 Inquiry from a physician as to the propriety of his giving information to the attorney for a man who was suing his wife for annulment, which information would relate to the physical condition of the wife prior to their marriage.

26 Request from a county medical society for advice as to whether certain action could legally be taken by resolution, rather than by amendment to bylaws

27 Inquiry from the secretary of a county medical society as to the type of consent necessary for a sterilizing operation.

28 Inquiry from the secretary of a county society as to whether paid notices in programs of charitable functions inserted by physicians constitute a violation of Medical Ethics

29 Request for an opinion as to the applicability in New York State of a case decided in another jurisdiction relating to the disciplining of physicians

30 Request by the secretary of a county society for opinion as to whether certain acts by a physician constitute advertising and a basis for disciplinary action

At the request of the House of Delegates, your Counsel during the past year has published, from time to time, in the Society's JOURNAL certain such inquiries together with your Counsel's answer to such inquiries, which related to subjects of general interest to the members of the profession

**Other Counsel Activities** Your Counsel, acting with the Committee on Bylaws, examined various proposed amendments to the Constitution and Bylaws of the State Society and of a number of component county societies and has rendered advice and made suggestions in connection therewith

Your Counsel drew the contracts between Mr Kent Lighty and the State Society with reference to advertising matter in the NEW YORK STATE JOURNAL OF MEDICINE, the *Medical Directory of New York, New Jersey, and Connecticut*, and the Commercial Exhibits

Your Counsel also drew the contract between the Society and Dr Joseph S Lawrence, its executive officer

Your Counsel drew the contract between the Society and Dr Peter Irving, its secretary and general manager

Your Counsel drew the contract between the Society and Mr Dwight Anderson, as director of the Public Relations Bureau and business manager of the NEW YORK STATE JOURNAL OF MEDICINE and the *Medical Directory of New York, New Jersey, and Connecticut*.

Your Counsel has conferred at various times with members of the various committees on certain phases of their work

Your Counsel attends and advises at the monthly meetings of the Council of your Society

Mr Clearwater, the attorney for the Society, has been in consultation with the Joint Committee on Medical Jurisprudence to cooperate with the Special Committee of the Bar Association and has attended a number of meetings of the Bar Association in connection therewith.

In addition to the above, your Counsel is constantly in communication by telephone and letter with Dr Peter Irving, secretary and general manager of the Medical Society of the State of New York, with regard to the many questions that arise almost daily in connection with his work

Also it should be noted that daily telephone calls from members of the Society come to your Counsel and his office staff which require advice and assistance on various problems in connection with the members' practice. Most of these telephone inquiries present emergency situations that cannot be handled by correspondence

**Legislative Advice and Activities.** At the writing of this report the legislature has been in session about one month.

Your Counsel has already examined some bills affecting the medical profession and has given advice with respect thereto

**Conclusion.** Once again in closing this report, we record our grateful appreciation to the members of your Society who have assisted us in the defense of malpractice actions both in court and in consultation. Without their assistance so generously given we could not have obtained the results shown in this report

Respectfully submitted,  
LORENZ J. BROSNAN, Counsel

## Amendments to Constitution and Bylaws

### To the House of Delegates, Gentlemen

At your last meeting there were considered seven separate amendments to the Constitution and Bylaws, two of which have now been combined. These amendments were placed on the table for action at the 1941 session, and they will not go to reference committees but to you as a whole. It is earnestly requested that each and every member digest these in advance and be prepared for discussion. Under the present bylaws "the affirmative vote of two-thirds of the House of

Delegates present and voting shall be necessary for adoption." These amendments cover

- A Change of Dues Year and Fiscal Year
- B Amendment of Previous Amendment
- C Rearrangement of Sessions of the House of Delegates
- D Payment of Expenses of District Branch Presidents Attending the House of Delegates as District Delegates

"Hospitalization, in the Zone of the Interior and in the Theatre of Operations," Colonel Floyd Kramer, M C, U S A., post surgeon, Fort Totten, New York, "The Practical Phases of the Early Recognition and Management of Shock," Dr Virgil Moon, professor of pathology, Jefferson Medical College, "Aviation Medicine," Lieutenant-Colonel Charles L. Maxwell, M C, U S A., post surgeon, Mitchel Field.

Between the morning and afternoon sessions, there was a luncheon at the Officers' Club which was attended by 240 physicians and members of the Woman's Auxiliaries of the four county societies composing the branch. This was the largest attendance ever recorded at any meeting of the branch. Dr James M. Flynn, president of the Medical Society of the State of New York, addressed the gathering.

The four Woman's Auxiliaries held a morning session at the Officers' Club, and an afternoon session at the same place. The afternoon session was addressed by Dr Kopetzky, president-elect of the Medical Society of the State of New York.

A short business session was held immediately after the luncheon and the following officers were elected for the term 1941-1943: president, Dr Burdge P. MacLean, Huntington, first vice-president, Dr Francis G. Riley, Jamaica, second vice-president, Dr John B. D'Albora, Brooklyn, secretary-treasurer, Dr Charles F. McCarty, Brooklyn.

Besides Dr Flynn and Dr Kopetzky, other officers of the State Society who honored us by their presence were Dr Peter Irving, secretary and general manager, and Dr Joseph S. Lawrence, executive officer. Thanks are due to Dr Mrs Luther H. Kice, president of the State Auxiliary, and Mrs A. C. Martin, president of the Nassau County Auxiliary, who arranged the auxiliary meeting.

During my two-year term of office, I have twice visited each county society composing the branch.

Respectfully submitted,  
L. H. BAUER, M D, *President*  
February 1, 1941

### Report of the Third District Branch *To the House of Delegates, Gentlemen*

The thirty-fourth annual meeting of the Third District Branch of the Medical Society of the State of New York was held at the Colonne Country Club at Albany on September 17, 1940. During the morning and afternoon sessions there were presented several timely papers by recognized authorities and these were much discussed by those present at the meeting. Among the subjects presented were "Gastric Hemorrhage," "Present Status of Sulfathiazole," "Observations on Human Refrigeration," "Specific Treatment of Pneumonia," and "Spa Therapy."

At the noon luncheon, Dr James M. Flynn, president of the State Society, made a brief but pertinent address, this was followed by a short discussion by Dr Peter Irving, secretary of the State Society. Mr Dwight Anderson, director of the Public Relations Bureau of the State Society, took a bow. Also Dr Louis C. Kress,

director of the State Health Department, Division of Cancer Control, spoke briefly on the problem of registration of cancer cases.

Following the luncheon period, election of officers took place with the following results: president, Dr Mahlon H. Atkinson, Catskill, first vice-president, Dr Stephen H. Curtis, Troy, second vice-president, Dr Homer L. Nelms, Albany, Secretary, Dr Harry Golembe, Liberty, Treasurer, Dr Henry C. Galster, Hudson.

A total of eighty-six persons attended this meeting, of whom ten were not members of the district. The largest group came from Albany County, Rensselaer County was quite well represented, and attendance from other counties of the district varied from two to four members from each. When the high standard of the program and its practical value to the general physician are considered, the attendance at this meeting was far below what it should have been.

A factor that may have contributed to the poor attendance was the delay in receiving of meeting, it required daily calls to the New York office to expedite the releasing of the programs. They finally came but most members of this district did not receive the programs until the day before the meeting and some had not yet received their copies when they arrived at the meeting. Obviously, such delay is a serious handicap if attendance at the meetings is to be maintained.

Respectfully submitted,  
ARTHUR M. DICKINSON, M D, *President*  
February 11, 1941

### Report of the Fourth District Branch *To the House of Delegates, Gentlemen*

The thirty-fourth annual meeting of the Fourth District Branch of the Medical Society of the State of New York was held on Tuesday and Wednesday, October 1 and 2 1940, at the Hotel Van Curler, Schenectady.

The meeting opened with a scientific session on Tuesday, October 1, at about 2 00 P. M. The following papers were presented: "Proprietary Medicines," by Dr A. H. Aaron, Buffalo, professor of clinical medicine, University of Buffalo School of Medicine, "Problem Fractures about the Elbow," by Dr Clay Ray Murray, New York, associate professor of surgery, College of Physicians and Surgeons, Columbia University, "Acute Cardiovascular Emergencies," by Dr John E. Detrick, New York, "Convalescence at the Spa," by Dr Edward J. Callahan, Saratoga Springs.

These papers were received with a good deal of interest by the members present and were well discussed.

Following the papers the meeting was briefly addressed by Dr Louis C. Kress, director of the Cancer Control Division of the New York State Department of Health, who endeavored to impress on our members the necessity and importance of reporting cases of malignant tumors. A business meeting followed, at which time the following officers were elected for the years 1941-1942: president, Dr E. Harrison Ormsby, Amsterdam, first vice-president, Dr William

*Chapter III, Section 4*, change the first sentence of this Section by deleting the words "on the second day of the session of the House of Delegates of each Annual Meeting," and inserting the words "at the last scheduled session of each Annual Meeting of the House of Delegates," making it read

"The first order of business at the last scheduled session of each Annual Meeting of the House of Delegates shall be the nominations for officers of the Society "

#### D Payment of Expenses of District Branch Presidents Attending the House of Delegates as District Delegates

Dr Theodore West of Westchester County introduced the following amendment at the 1940 House of Delegates to amend *Chapter X, Section 1*, by insertion of an additional sentence after the fifth sentence to read

"Presidents of the District Branches sitting in the House of Delegates shall be allowed necessary expenses "

#### E Duties of Officers

Dr George W Kosmak introduced the following amendment at the 1940 House of Delegates to amend *Chapter VII*, by insertion of a new section, *Section 10-A*, to read

"An assistant to the Treasurer shall be appointed annually by the Council at its organization meeting, who shall serve and be subject to the supervision and order of the Treasurer, shall be adequately bonded, have

no voice or vote in any meeting, shall be suitably remunerated through an order of the Council and be empowered to sign checks in special rotating funds to be set up as needed by the Trustees "

#### F Jurisdiction of Board of Censors

Dr Peter Murray of New York County introduced the following amendment at the 1940 House of Delegates to amend *Chapter VI, Section 2*, by repealing and deleting therefrom the second sentence of said section beginning with the words "Any member" and ending with the words "component county society" and enacting and inserting, in lieu thereof, the following

"Any member of any component medical society who shall have been disciplined or directed to suffer discipline in any degree by any final decision of his county medical society and who shall have exhausted his right of appeal, if any, with any such county medical society, feeling aggrieved by the decision of such society, may appeal to the Board of Censors of this Society from the decision of such component medical society by filing a notice of appeal with the Secretary of this Society and with the Secretary of such component medical society within three months after such final decision by such component medical society "

Respectfully submitted,

LOUIS H BAUER, M.D., *Speaker*  
PETER IRVING, M D, *Secretary*

## Report of the First District Branch

### *To the House of Delegates, Gentlemen*

The annual meeting of the First District Branch was held at St Luke's Hospital and at the Woman's Hospital, in New York City, on October 9, 1940

Following the custom of the past few years, the program was arranged by the staffs of the two hospitals, beginning at 8 00 A.M. and continuing until 5 30 P.M. There were clinics, demonstrations, and lectures covering practically every field of medicine, affording the men in the district a complete "refresher session" in whatever department of medicine they desired

The attendance was the best for several years, which we believe indicates that this is the type of meeting that the men prefer

All credit for the arrangement and execution of the program should be given to Dr Edward J Donovan and Dr Albert H Aldridge.

We wish to extend our appreciation to them and to the superintendent of St Luke's Hospital for the delightful luncheon

Immediately after luncheon, Dr James M Flynn, president of the State Society, made a short and forceful address, which was well received. Following this, election of officers was held, and the following men were elected president, Dr Alexander N Selman, Spring Valley, first vice-president, Dr Morris R Bradner, Warwick, second vice-president, Dr

James G Morrissey, Yonkers, secretary, Dr Isidore J Landsman, Bronx, treasurer, Dr Aaron Sobel, Poughkeepsie

Respectfully submitted,  
THEODORE WEST, M D, *President*

December 23, 1940

## Report of the Second District Branch

### *To the House of Delegates, Gentlemen*

The annual meeting of the Second District Branch was held at Mitchel Field, Garden City, through the courtesy of the commanding officer of that station on November 13, 1940. The scientific program was devoted to military medicine

The program was as follows—Morning Session "Plans of the Medical Profession for National Preparedness and Mobilization," Dr Samuel J Kopetzky, chairman, Council Committee on Medical Preparedness, Medical Society of the State of New York, "General Principles of Medico-Military Care and Evacuation," Colonel Julius Blank, M C U S A. Headquarters, 2nd Corps Area, "Plastic Surgery in Connection with General Medical Work," Dr Clarence R. Straatsma, past-president, Society of Plastic and Reconstructive Surgery. At the afternoon session the following talks were given "The Treatment of Head Injuries," Lieutenant-Colonel M F DuFrenne, M C, U S A., post surgeon, Fort Jay, New York,

tory Aids in the Early Diagnosis of Communicable Disease," Dr A. H. Harris, Jr., Albany, "Cancer," prepared by the Metropolitan Life Insurance Company

In addition to these exhibits there was a trip to the Physiological Field Station of Cornell University, where Dr Howard Liddell described the technic and demonstrated the mechanical devices used in the study of the neurotic animal

The 1941 meeting of the Sixth District Branch will be held in Cooperstown on September 18

Respectfully submitted,

G M MACKENZIE, M D, *President*

February 15, 1941

## Report of the Seventh District Branch

*To the House of Delegates, Gentlemen*

The thirty-fourth annual meeting of the Seventh District Branch of the Medical Society of the State of New York was held at the Clifton Springs Sanitarium, Clifton Springs, September 26, 1940

The meeting began at 10 00 A.M., with sound motion pictures, of the historical type, devoted to episodes of medical interest Dr James M Flynn, president of the Medical Society of the State of New York, then spoke briefly, as did Dr Joseph S Lawrence, the state executive officer This was followed by the scientific program "The Recognition and Prevention of the Late Toxemias of Pregnancy in Their Incipient Stages," by Dr Herbert F Dyer, of Hamilton, Ontario—discussion by Dr James K Quigley, of Rochester, Dr Thomas W Maloney, of Geneva, and Dr A. B. Chidester of Auburn

After a bountiful dinner served in the main dining hall of the sanitarium, the afternoon session began with a paper by Dr Elmer Milch, of Buffalo, on the "Treatment of General Peritonitis Following Ruptured Appendix." This paper was discussed by Dr Lynn Rumbold, of Rochester, Dr Alfred K Bates, of Auburn, and Dr H J Knickerbocker, of Geneva

During the afternoon, Dr Benjamin J Slater, of Rochester, showed a movie travelogue, "A Trip to the Mediterranean," from films taken by himself These color films were shown as an entertainment for the ladies and were much appreciated.

The meeting closed with a medical "Correct or Incorrect" Contest, conducted by Dr Floyd S Winslow, of Rochester, with two teams of six doctors each. The sanitarium team won the contest, which was interesting and amusing to the 250 doctors in attendance

Respectfully submitted,

FREDERICK W LESTER, M D, *President*

February 4, 1941

## Report of the Eighth District Branch

*To the House of Delegates, Gentlemen*

A very interesting and varied program was given at the annual meeting of the Eight District Branch held at the Hotel Niagara, Niagara Falls, Thursday, October 3, 1940 The morning session began at 9 30 with the showing of motion pictures, which included the following subjects "Occuput Posterior," Dr Arthur H Bill, "Varicose Veins Their Treatment by the Modern Combined Ligation and Injection Treatment," Dr H O McPheeters, "Cardiac Irregularities," Dr Carl J Wiggers Following these, Dr N Stanley Lincoln, Superintendent of the Mount Morris Tuberculosis Hospital, discussed "The Diagnosis and Management of Early Pulmonary Tuberculosis," emphasizing many points in his paper by the use of lantern slides

Dr W P Van Wagenen, associate professor of neurosurgery, University of Rochester School of Medicine, Rochester then gave a very interesting paper on "The Rationale of Common Procedures Used in the Care of Head Injuries"

Luncheon was served in the main ballroom, at which time Dr James M Flynn, president of the Medical Society of the State of New York, spoke briefly on "Problems Confronting the Medical Profession Today"

The afternoon program was opened with a paper, "Problems in the Care of the Premature Infant," by Dr Julius H Hess, professor of pediatrics, and head of that department at the University of Illinois College of Medicine, Chicago

The remaining portion of the program was devoted to a "Round Table Discussion on Therapy," conducted by Dr A. H. Aaron, Buffalo, and assisted by Drs F D Leopold, Frank Meyers, W J Orr, W J Rose, L M Siegel, and L Maxwell Lockie Numerous questions were received from the audience and a lively discussion of many subjects resulted from them

In addition to the scientific program presented for the members of the Eight District, an entertainment program for the wives of those attending the session was provided The Woman's Auxiliary of the Erie County Medical Society was host at a luncheon in the main dining room of the hotel Following the luncheon, moving pictures were presented by Mrs Edward G Winkler, a member of the Auxiliary Bridge, and a sightseeing trip around the Falls, were included for the visiting fair sex.

The entire program was well attended, there being almost two hundred present for the scientific program, in addition to another one hundred of the auxiliary and guests

Respectfully submitted,

LEON J LEAHY, M D, *President*

February 9, 1941

Warriner Woodruff, Saranac Lake, second vice-president, Dr Harold A Peck, Glens Falls, secretary, Dr John E Free, Ogdensburg, treasurer, Dr F Leslie Sullivan, Scotia

The officers and visiting members of the Fourth District Branch were guests of the Schenectady County Medical Society at a dinner held in the evening at the Hotel Van Curler

President S C Clemans presided and addresses were given by the state president, Dr James M Flynn, who spoke on the need for membership in the State Society and what the Society has to offer its members Dr Samuel J Kopetzky, president-elect, spoke on the organization for Medical Military Service

Entertainment was furnished by an orchestra composed of members of the Schenectady County Society, who rendered both vocal and instrumental solos as well as orchestral numbers

The Woman's Auxiliary of Schenectady entertained the ladies from the other counties of the district in the afternoon and also as their guests at the dinner in the evening

The second scientific session began at 9 30 A M on Wednesday, October 2, at which time the following papers were presented and received a great deal of instructive discussion "Pentothal Sodium in General Surgery," by Dr Edward S McDowell, Plattsburg—collaborators Dr William W Johnson and Dr William H Ladue, Plattsburg, "Medical Care of the Indigent Sick," by Dr Louis H Bauer, Hempstead, "Treatment of Unusual Fractures," Lantern Slide Demonstration by Dr Frederick F McGauley, Schenectady

This branch meeting was successful in having a large attendance from the various counties comprising the branch and its officers are indebted to the officers and members of the Schenectady County Medical Society in arranging and taking care of the annual meeting so well

Respectfully submitted,  
S C CLEMANS, M D, President

January 20, 1941

## Report of the Fifth District Branch

*To the House of Delegates, Gentlemen*

The thirty-fourth annual meeting of the Fifth District Branch was held in the Hotel Snyder, Little Falls, on September 24, 1940 Seventy members and guests were present The following program was presented "Newer Concepts of Hypertension," by Dr Harry Dan Vickers, Little Falls—discussion opened by Dr Wardner P Ayer, Syracuse, "Diagnosis of Carcinoma of the Lung," by Dr George G Ornstein, New York—discussion opened by William C Jensen, superintendent of Broadacres, Oneida County Sanatorium, Utica, "Appendicitis in Children," by Dr Brewster C Doust, professor of pediatrics, Syracuse University—discussion opened by Dr Frederick S Wetherell, Syracuse, Symposium on "General and Local Cryotherapy," by Dr John C A Gerster, Cornell University Medical College, New York—Dr Gerster gave a very interesting paper on the subject as to history, technic, indications and contraindications, and the results obtained, "Chemotherapy

in General Practice," by Dr Henry van Zile Hyde, Syracuse—Dr Hyde gave a very complete review on sulfanilamide, sulfapyridine, and sulfathiazole

All the papers evoked considerable discussion by the men present

At the dinner Dr James M Flynn as state president gave a very interesting talk on medical ethics

The Woman's Auxiliary of the Herkimer County Society entertained the visiting ladies with a luncheon at the Beechnut Hotel in Canajoharie, and a trip through the Beechnut Packing Company plant in Canajoharie

Respectfully submitted,

FRED C SABIN, M D, President

February 10, 1941

## Report of the Sixth District Branch

*To the House of Delegates, Gentlemen*

The thirty-fourth annual meeting of the Sixth District Branch of the Medical Society of the State of New York was held in Willard Straight Hall at Cornell University, Ithaca, New York, on Thursday, September 19, 1940 For the meeting 172 registered

The members of the Sixth District Branch are greatly indebted to the Tompkins County Medical Society for providing luncheon, and to Professor Norman S Moore of the Department of Hygiene of Cornell for making such excellent arrangements for the meeting The program was as follows—Morning Session "Recent Progress in Thoracic Surgery," by Dr J Maxwell Chamberlain, Homer Folks Hospital, Oneonta—discussion by Dr R J Erickson, Albany, associate professor of medicine, Albany Medical College, "The Clinical Use of Ovarian Sex Hormones," Dr Benjamin P Watson, New York, professor of obstetrics and gynecology, Columbia University College of Physicians and Surgeons—discussion by Dr Claude E Chapin, Cortland, "The Clinical Use of Sulfonamide Drugs," Dr Colin M MacLeod, New York, Hospital of the Rockefeller Institute—discussion by Dr Norman S Moore, Ithaca

At the afternoon session "The Psychoneuroses," Dr Thomas Rennie, Baltimore, associate in psychiatry, School of Medicine of the Johns Hopkins University—discussion by Dr Waldemar Boldt, Binghamton, "Sudden and Unexpected Deaths from Natural Causes," Dr Thomas A Gonzales, chief medical examiner of the City of New York—discussion by Dr Floyd S Winslow, Rochester

An innovation was introduced in the form of exhibits which were inspected by a large number of those who came to the meeting Among these were "The Diagnostic Value of Photographs of the Interior of the Eye," Dr Arthur J Bedell, Albany, "Salivary Reflexes in Students in the Civilian Pilot Training Corps at Cornell University," Richard Parmenter, Ph D, Ithaca, "The Influence of Diet on Aging Processes," Professor L A Maynard and Professor C M McCay, Ithaca, "Colored Reproductions of Normal and Pathologic Blood Cells," Dr William A Groat, Syracuse, "Certain Labor-

# Scientific Program

The Committee Albert F R Andresen, M D , *Chairman*, Brooklyn,  
A W Martin Marino, M D , Brooklyn, and  
Chairmen of Sections and Sessions

## GENERAL SESSIONS

(*Dr Andresen presiding*)

The presentations at these Sessions will consist of one-half hour lectures, without discussion. The meetings will start promptly at the hour specified. Members are requested to be in their seats at least five minutes in advance of the meeting time.

*Meetings will be held by Daylight Saving Time*

Tuesday, April 29—2 00 P M  
Hotel Statler, Ballroom

### SYMPOSIUM PSYCHOSOMATIC PROBLEMS

The effect of "mind over matter" has in recent years again assumed prominence in many fields of medicine, and the psychosomatic aspects of all kinds of diseases are once more being emphasized. General practitioner and specialist alike are becoming bewildered on considering the diversity of opinions in regard to this important subject. The speakers in this symposium have been devoting their time to intensive study of psychosomatic problems so that an authoritative review of the subject will be presented.

- 1 Cause and Motive in Health and Disease  
Bernard Glueck, M.D., Ossining
- 2 The Importance of the Investigation of Personality Factors  
Edwin J Doty, M.D., Assistant Attending Psychiatrist, Payne Whitney Psychiatric Clinic, New York Hospital, New York
- 3 Practical Aspects of Psychiatric Management  
George Eaton Daniels, M.D., Clinical Professor of Psychiatry, College of Physicians and Surgeons, Columbia University, New York
- 4 Medicine and Mental Symptoms  
(The A. Walter Suter Lecture. This will be the third lecture to be delivered under this lectureship fund.)  
Foster Kennedy, M.D., Professor of Clinical Medicine (Neurology), Cornell University Medical College, New York

Thursday, May 1—2 00 P M  
Hotel Statler, Ballroom

### SYMPOSIUM TRAUMA—ITS EARLY TREATMENT

At any time any physician may be called upon to administer first aid in a major accident case. Incorrect early treatment may result in serious consequences. Knowing what to do, and especially what not to do, may often result in the saving of a life. Entirely aside from the important military aspects of this problem it will be of advantage to all practitioners of medicine to hear the speakers in this symposium present the latest authoritative views on the proper care of injuries to various vital regions of the body.

- 1 The Treatment of Head Injuries  
Fred W Geib, M.D., Attending Neurosurgeon, Rochester General Hospital, Rochester
- 2 The Diagnosis and Treatment of Fractures of the Spine with and Without Spinal Cord Injury  
E. Jefferson Browder, M.D., Clinical Professor of Surgery, and of Neurology and Psychiatry, Long Island College of Medicine, Brooklyn
- 3 The Treatment of Injuries to the Chest  
Frank B Berry, M.D., Assistant Clinical Professor of Surgery, College of Physicians and Surgeons, Columbia University, New York
- 4 The Treatment of Injuries to the Abdomen  
Fenwick Beekman, M.D., Clinical Professor of Surgery, New York University College of Medicine, New York

[Section and Session programs on following pages]

# 1941 Annual Meeting

## Medical Society of the State of New York

April 28, 29, 30, May 1—Hotel Statler, Buffalo

*All meetings will be held by Daylight Saving Time*

### House of Delegates

The regular Annual Meeting of the House of Delegates of the Medical Society of the State of New York will be called to order at 10 00 A M on Monday, April 28, in the Meeting Room on the Seventeenth Floor

LOUIS H BAUER, M D, *Speaker*

PETER IRVING, M D, *Secretary*

### Annual Meeting

The Annual Meeting of the Medical Society of the State of New York will be held on Tuesday, April 29, at 7 00 P M, in the Ballroom

JAMES M FLYNN, M D, *President*

PETER IRVING, M D, *Secretary*

### Registration

Registration will be held on the Seventeenth Floor—for delegates on Monday, April 28, after 9 00 A M, for members on Monday, Tuesday, Wednesday, and Thursday, April 28, 29, 30, May 1, from 9 00 A M to 6 00 P M

### Exhibits

Scientific and Technical exhibits will be located in the Hotel

Scientific Motion Pictures will be shown

### Scientific Sessions

General Sessions on Tuesday and Thursday afternoons Section and Session meetings will be held on Tuesday morning, Wednesday morning and afternoon, and Thursday morning

### Section on Industrial Medicine and Surgery Luncheon

On Tuesday, April 29, the Section on Industrial Medicine and Surgery will hold a subscription luncheon Mr Henry D Sayer will speak on "A Review of Medical Practices Under the Compensation Law"

### Workmen's Compensation Conference

Chairmen and members of Compensation Boards of the county societies and

others will assemble in the Iroquois Room at 2 00 P M for a conference meeting on problems in this field David J Kaliski, M D, Director of the Workmen's Compensation Bureau, will preside

### 135th Annual Meeting

Hotel Statler, Ballroom, Tuesday, April 29, 7 00 P M

Calling the Society to order by the President, James M Flynn, M D

Reading of the minutes of the 134th Annual Meeting by the Secretary, Peter Irving, M D

### The Annual Banquet

The Annual Banquet will be held in the Ballroom on Tuesday, April 29, at 7 00 P M, guestspeakers to be announced

Requests for tickets and reservations should be sent to Lester S Knapp, M D, *chairman*, Banquet Committee, Hotel Statler, Room 1810, Buffalo, or telephone, Cleveland 1810 Tickets \$5

### Public Meeting

In the Ballroom will be held a meeting for the public at 8 30 P M on Wednesday, April 30 Cards of invitation (without cost) can be secured in advance by writing to A H Aaron, M D, *chairman*, Public Meeting Committee, Hotel Statler, Room 1810, Buffalo, by telephoning Cleveland 1810, or they can be obtained at the Registration Desk, Seventeenth Floor

### Tumor Clinic Round Table Conference

In the Iroquois Room will be held a round-table conference at 8 00 P M on Wednesday, April 30, where the problems of Tumor Clinics will be discussed under the auspices of the Medical Society of the State of New York and the Division of Cancer Control of the New York State Department of Health

### The Woman's Auxiliary

*See page 773 for the program*

Thursday, May 1—10 00 A.M.

Hotel Statler, Georgian Room

- 1 Intestinal Obstruction from the Practitioner's Viewpoint  
W Osler Abbott, M.D., Philadelphia (By invitation)  
Discussion Leon J Leahy, M D, Buffalo
- 2 Polyps of the Rectum and Colon—Their Etiology, Clinical Significance, and Treatment  
John C M Brust, M D, Syracuse  
Discussion Alfred M Buda, M D, Brooklyn
- 3 Multiple Polyposis (Adenomatosi) of the Colon  
Descum C McKenney, M D, Buffalo  
Discussion Harry Goldman, M.D., New York
- 4 Cryptitis—Perianal and Perirectal Infections  
F Leslie Sullivan, M.D., Scotia  
Discussion Harry C Guess, M D, Buffalo

# SECTION OF INDUSTRIAL MEDICINE AND SURGERY

Chairman John J Wittmer, M D, New York  
Secretary John L Norris, M D, Rochester

Tuesday, April 29—10:00 A.M.

Hotel Statler, Iroquois Room

- 1 Clinical Considerations of Poisonings by Some of the Chlorinated Hydrocarbons  
Henry Field Smyth, M.D., Philadelphia (By invitation)  
Discussion May R. Mayers, M D, New York (By invitation)
- 2 The Potential Hazards of Some of the Newer Solvents  
William J McConnell, M D, New York (By invitation)  
Discussion Leonard Greenburg, M D, New York
- 3 Solvent Exposures—Petroleum Distillates  
A. L Brooks, M D, Detroit, Michigan (By invitation)  
Discussion James H Sterner, M D, Rochester

Wednesday, April 30—2:00 P M

Hotel Statler, Iroquois Room

# SYMPOSIUM INDUSTRIAL HEALTH

- 1 Periodical Examinations  
McIver Woody, M.D., New York
- 2 New Medical Opportunities in National Defense Industries  
Clarence D Selby, M.D., Detroit, Michigan (By invitation)
- 3 Industrial Health and the General Practitioner  
Leverett D Bristol, M.D., New York  
Discussion Irving Gray, M D, Brooklyn,  
Russell C Kimball, M D, Brooklyn

# SECTION ON MEDICINE

Chairman Louis Faugeres Bishop, Jr, M D, New York  
Secretary Scott Lord Smith, M D, Poughkeepsie

Tuesday, April 29—10 00 A.M.

Hotel Statler, Ballroom

- 1 Treatment of Fibrositis  
Charles LeRoy Steinberg, M.D., Rochester  
Discussion Morris Ant, M D, Brooklyn
- 2 The Urinary Tract in Medical Practice  
Clayton W Greene, M.D., Buffalo  
Discussion Allister M McLellan, M D, New York
- 3 The Diagnosis of Upper Abdominal Conditions  
Maximilian A Ramirez, M D, New York  
Discussion Henry Craig Fleming, M D, New York
- 4 Chemotherapy of Infection of Nervous System  
Willard B Weary, M D, Albany (By invitation)  
John J A. Lyons, M D, Albany (By invitation)  
Discussion Emanuel Appelbaum, M D, New York, H van Zile Hyde, M D, Syracuse

Wednesday, April 30—2 00 P M

Hotel Statler, Ballroom

- Address Soldier's Heart  
Louis Faugeres Bishop, Jr, M D, New York  
Discussion C Ward Crampton, M D, New York
- 1 Principles Underlying the Treatment and Management of Coronary Disease  
Frederick A. Willius, M.D., Rochester, Minnesota (By invitation)
  - 2 Follow-Up Study of Coronary Occlusion Comparative Study of Various Function Tests  
Arthur M Master, M D, New York  
Simon Dack, M.D., New York  
Harry L Jaffe, M D, New York  
Discussion of Papers Louis H Bauer, M D, Hempstead, Roy M Colhe, M D, Schenectady

# SECTION ON NEUROLOGY AND PSYCHIATRY

Chairman Wallace B Hamby, M D, Buffalo  
Secretary John E Scarff, M D, New York

Wednesday, April 30—10 00 A.M.

Hotel Statler, Chinese Room

- 1 Abscess of the Brain—Medical Diagnostic Aspects  
Gilbert M Beck, M D, Buffalo  
Irving Hyman, M D, Buffalo  
Discussion Joseph E J King, M D, New York

## SECTIONS

All papers read before the Society by members become the property of the Society. The original copy of each paper shall be left with the secretary of the section.

Discussers should have their remarks typed and hand them to the secretary.

Time limits. Twenty minutes for each paper, five minutes for individual discussion.

Section meetings will begin promptly at the hour specified.

### SECTION ON DERMATOLOGY AND SYPHILOLOGY

Chairman Herbert H. Bauckus, M.D., Buffalo  
Secretary Eugene F. Traub, M.D., New York

Wednesday, April 30—10 00 A.M.

Hotel Statler, Room 302

1. Dalhousie's Water—Its Uses in Dermatology  
Timothy J. Riordan, M.D., New York  
Orlando Canizares, M.D., New York  
George Edward Morris, M.D., New York  
(By invitation)

Discussion Frank C. Combes, M.D., New York

2. Contact Dermatitis  
Irving Swartz, M.D., Syracuse

Discussion W. Francis Hoover, M.D., Jamestown

3. Some Common Problems in the Management and Diagnosis of Contact Dermatitis

Albert R. McFarland, M.D., Rochester

Discussion Howard Fox, M.D., New York

4. Report of Subcommittee on Industrial Dermatoses

Eugene F. Traub, M.D., New York

5. Treatment of Epitheliomas by Modern X-Ray Technique

George Clinton Andrews, M.D., New York

Discussion Earl D. Osborne, M.D., Buffalo

Thursday, May 1—10 00 A.M.

Hotel Statler, Room 302

1. The Treatment of Hypertrichosis by Electrocoagulation

Charles Lerner, M.D., New York

Discussion Paul Gross, M.D., New York

2. The Acidity on the Surface of the Skin

Eugene Traugott Bernstein, M.D., New York

Franz Herrmann, M.D., New York (By invitation)

Discussion Herman Sharlit, M.D., New York

Aurotherapy in Lupus Erythematosus, A Study Based on a Further Experience of Fourteen Years

Paul E. Bechet, M.D., New York

Discussion Edward R. Maloney, M.D., New York

4. Intensive Dosage, The "New" Interest in Arsenotherapy of Early Syphilis

A. Benson Cannon, M.D., New York

Discussion Lopo DeMello, M.D., Buffalo

5. Treatment of Pyoderma by Intravenous Injections of a Mixture of Yatro and Pus Obtained from Local Lesions

L. J. Arnesson, M.D., Buffalo

Discussion Harold L. Walker, M.D., Elmira

### SECTION ON GASTROENTEROLOGY AND PROCTOLOGY

Chairman John L. Kantor, M.D., New York  
Vice-Chairman

A. W. Martin Marimo, M.D., Brooklyn

Secretary H. Walden Retan, M.D., Syracuse

Wednesday, April 30—10 00 A.M.

Hotel Statler, Georgian Room

Address Role of Gastroenterology in American Military Medicine

John L. Kantor, M.D., New York

### SYMPOSIUM

#### FOOD-BORNE DISEASES OF THE GASTROINTESTINAL TRACT

1. Food Inspection  
Orville E. McKim, D.V.M., Port Chester  
(By invitation)

Discussion E. T. Faulder, D.V.M., Albany  
(By invitation)

2. Epidemiology of Food-Borne Diseases of the Gastrointestinal Tract

James E. Perkins, M.D., Albany

Discussion Stanley W. Sayer, M.D., Gouverneur

3. Laboratory Aids in Diagnosis and Control of Enteric Diseases

Albert H. Harris, 2nd, M.D., Albany

Marion B. Coleman, B.S., Albany

Discussion Samuel Frant, M.D., New York

4. The Treatment of Food-Borne Diseases of the Gastrointestinal Tract

Zacharias Bercovitz, M.D., New York

Discussion Howard B. Shookhoff, M.D., New York

- 3 Industrial Otology in Caisson Workers  
Ralph Almour, M.D., New York  
Discussion James W Babcock, M D, New York

4. Treatment of Ethmoiditis  
John R. Honiss, M.D., Rochester  
Discussion Arthur Palmer, M.D., New York, Frederick J O'Connor, M D, Syracuse

### SECTION ON ORTHOPEDIC SURGERY

Chairman Frank N Potts, M D, Buffalo  
Secretary Donald E. McKenna, M D, Brooklyn

Wednesday, April 30—10 00 A.M.  
Hotel Statler, Chinese Room

#### SYMPOSIUM SPASTIC PARALYSIS

- 1 The Cerebral Palsy Problem  
Lyman C Duryea, M.D., New York (By invitation)
- 2 Neurologic Aspects of Spasticity and Athetosis  
Tracy J Putnam, M D, New York
- 3 Differential Characteristics of Spasticity and Athetosis in Relation to Therapeutic Measures  
Winthrop M. Phelps, M.D., Baltimore (By invitation)

Thursday, May 1—10 00 A.M.  
Hotel Statler, Chinese Room

- 1 Fractures of the Radial Head and Neck  
Henry P Lange, M D, Brooklyn
- 2 Results in Internal Fixation of Intracapsular Fractures of the Hip  
William W Plummer, M.D., Buffalo
- 3 Injuries to Cervical Vertebrae  
Barbara B Stimson, M.D., New York
- 4 The Treatment of Fracture of the Patella by Excision  
Robert P Dobbie, M.D., Buffalo

### SECTION ON PATHOLOGY AND CLINICAL PATHOLOGY

Chairman Ward J MacNeal, M D, New York  
Vice-Chairman Herbert R. Brown, M D, Rochester  
Secretary M J Fein, M.D., Brooklyn

Tuesday, April 29—9.30 A.M.  
Hotel Statler, Room 310

- 1 The Serodiagnosis of Trichinosis by Means of Complement Fixation  
Ernest Witebsky, M.D., Buffalo
- 2 The Volume of the Blood and Extracellular Fluid in Congestive Heart Failure  
Nolan L Kaltreider, M.D., Rochester  
George R. Meneely, M D, Rochester

- 3 Recent Developments in Bacteriophage  
Ward J MacNeal, M D, New York  
Discussion Arthur W Wright, M D, Albany

4. The Pathology of the Apocrine Sweat Glands in Dogs  
Robert McClelland, D V M, Buffalo (By invitation)

Discussion Norman Elton, M D, Buffalo

- 5 Blood Supply Experimental Tumors  
Stafford L. Warren, M.D., Rochester

- 6 Recent Advances in Bacillary Dysentery  
Joseph Felson, M D, New York

Wednesday, April 30—2 00 P M  
Hotel Statler, Room 310

- 1 Aplastic Anemia  
Stuart L. Vaughan, M D, Buffalo
- 2 Adenocarcinoma of Cervix  
Burton T. Simpson, M.D., Buffalo  
Alphonse A. Thibaudeau, M.B., Buffalo (By invitation)  
Eugene M. Burke, B S, Buffalo (By invitation)
- 3 Recent Developments in the Field of Laboratory Medicine  
Ralph G Stillman, M.D., New York  
Discussion Walter S Thomas, M D, Rochester
4. Experimental Acute Gastric Ulcer Produced in Animals by Exposure to Sulfur Dioxide Gas  
Frederick R. Weedon, M.D., Jamestown
- 5 The Dissemination of Tubercle Bacilli from Fresh Autopsy Material  
Ruell A. Sloan, M.D., Buffalo  
Discussion David K. Miller, M D, Buffalo
- 6 Effect of Kidney Extract on the Cardiovascular and Renal Systems  
Benjamin Jablons, M.D., New York  
Discussion J Homer Cudmore, M D, New York

### SECTION ON PEDIATRICS

Chairman Norman L Hawkins, M D, Watertown  
Vice-Chairman Leshe O Ashton, M D, New York  
Secretary William J Orr, M D, Buffalo

Wednesday, April 30—10 00 A.M.  
Hotel Statler, Ballroom

- 1 The Use of Bovine Antitoxin for Prophylaxis of Tetanus  
Jerome Glaser, M.D., Rochester
- 2 The Use of Vitamin K in Children  
Samuel W Clausen, M.D., Rochester
- 3 Clinical Endocrinology in Children  
Walter Timme, M.D., New York

- 2 Oxycephaly  
Joseph E J King, M.D, New York  
Discussion Fred W Geib, M D, Rochester
- 3 The Present Status of Surgical Procedures  
Directed Against Extrapyramidal Diseases  
H Russell Meyers, M.D, Brooklyn
- 4 Nervous and Mental Diseases of Soldiers  
During Active Warfare  
George A. Blakeslee, M.D, New York  
Discussion R. Montfort Schley, M D, Buffalo

Thursday, May 1—10 00 A.M

Hotel Statler, Room 338

- 1 The Present Status of Vitamins in Nervous  
Health and Disease  
Herman Wortis, M.D, New York  
Norman Jolliffe, M D, New York  
Discussion Noble R. Chambers, M D,  
Syracuse, Franklin C Southworth, M D,  
Buffalo
- 2 The Surgical Treatment of Epilepsy  
William P Van Wagenen, M.D, Rochester  
Discussion Eldridge H Campbell, M D,  
Albany
- 3 The Various Forms of Shock Therapy in  
Mental Disorders and Their Practical Im-  
portance  
Lothar B Kalinowsky, M D, New York  
(By invitation)  
Discussion S Eugene Barrera, M D, New  
York, and Ralph W Bohn, M D, Helmut
- 4 An Evaluation of the Surgical Treatment of  
Hypertension  
George J Heuer, M D, New York  
Frank Glenn, M D, New York

## SECTION ON OBSTETRICS AND GYNECOLOGY

Chairman Francis R. Irving, M D, Syracuse  
Secretary Eliot Bishop, M D, Brooklyn

Tuesday, April 29—10 00 A.M

Hotel Statler, Chinese Room

- 1 Rectocele—A Consistent Lesion Frequently  
Overlooked in Standard Repairs  
Joshua William Davies, M D, New York  
Discussion Edward P McDonald, M D,  
Albany
- 2 Obstetrical Problems Arising from Excessive  
Size of the Infant  
Karl M Wilson, M.D, Rochester  
Discussion Francis C Goldsborough, M D,  
Buffalo, and Henry W Schoeneck, M D,  
Syracuse
- 3 The Present Status of Gynecological Hor-  
mone Therapy  
Samuel H Geist, M D, New York  
Udall J Salmon, M.D, New York  
Discussion Nathan P Sears, M D, Syra-  
cuse

4. The Direct Supravescical Extraperitoneal  
Cesarean Section  
Francis R. Irving, M.D, Syracuse  
Raymond J Pieri, M.D, Syracuse  
Discussion Edward G Waters, M.D,  
Jersey City, New Jersey (By invitation),  
and Henry T Burns, M D, New York

Wednesday, April 30—2 00 P M

Hotel Statler, Chinese Room

- 1 Pruritis Vulvae  
James E King, M.D, Buffalo  
Discussion J Craig Potter, M D, Roches-  
ter
- 2 Ovarian Malignancy—A Clinical and Patho-  
logical Evaluation  
Andrew A. Marchetti, M.D, New York  
Discussion Ward L Ekas, M D, Roches-  
ter, and Samuel A. Wolfe, M D, Brooklyn
- 3 Streptococcal Puerperal Infections  
Fred L Adair, M.D, Chicago (By invita-  
tion)

## SECTION ON OPHTHALMOLOGY AND OTOLARYNGOLOGY

Chairman Searle B Marlow, M D, Syracuse  
Secretary C Stewart Nash, M D, Rochester

Wednesday, April 30—9 00 A.M

Hotel Statler, Iroquois Room

- Instruction Hour Tonometry  
Jonas S Friedenwald, M.D, Baltimore (By  
invitation)
- 1 Ophthalmoscopic Findings Versus Sinusitis  
Arthur J Bedell, M.D, Albany  
Discussion John F Fairbairn, M D  
Buffalo, David F Gillette, M D, Syracuse
  - 2 Subnormal Vision and Occupation Aptitude  
Albert C Snell, M.D, Rochester  
Discussion Walter S Atkinson, M D,  
Watertown, James I Farrell, M D, Utica
  - 3 The General Practitioner's Share in the  
Campaign for the Prevention of Blindness  
in Patients Suffering from Glaucoma  
Mark J Schoenberg, M D, New York  
Discussion William A Groat, M D, Syra-  
cuse, Harold H Joy, M D, Syracuse

Thursday, May 1—10 00 A.M

Hotel Statler, Iroquois Room

- 1 Relation of a Specialist to the General  
Hospital and Its Personnel  
Frank M Sulzman, M D, Troy  
Discussion Albert M Rooker, M D,  
Niagara Falls, William J Hicks, M D,  
Middletown
- 2 The Management of Cavernous Sinus  
Thrombosis  
Gordon D Hoople, M.D, Syracuse  
Irl H Blaisdell, M.D, Syracuse  
Discussion Harry K Tebbutt, M D,  
Albany, Homer A Trotter, M D, Buffalo

- 2 Intravenous Anesthesia  
Brian C. Sword, M.D., New York (By invitation)  
Discussion Frederick C. Wilcox, Jr., M.D., Brooklyn
- 3 Continuous Spinal Anesthesia  
G. Edgar Burford, M.D., New York  
Discussion Virginia Apgar, M.D., New York

Wednesday, April 30—2:00 P.M.  
Hotel Statler, Room 302

- 1 Water Balance  
Lourdon C. Reid, M.D., New York (By invitation)  
Discussion John Scudder, M.D., New York (By invitation)
- 2 Recent Advances in Therapeutic Nerve Block  
Emery A. Rovenstone, M.D., New York  
Discussion Paul W. Searles, M.D., Buffalo
- 3 Problems of Obstetrical Anesthesia in the Average Hospital  
John A. Kalb, M.D., Endicott  
Discussion Paul M. Wood, M.D., New York
- 4 Anoxia, with Special Reference to Aviation  
Frederick A. D. Alexander, M.D., Albany  
Discussion Clarence J. Durshodwe, M.D., Buffalo

Thursday, May 1—8:00 P.M.  
Hotel Statler, Room 302

A Clinic on Subcutaneous Oxygen will be given by John H. Evans, M.D., and L. Maxwell Lockie, M.D., of Buffalo. Cases treated will be presented, and technic demonstrated.

#### SECTION ON SURGERY

Chairman Roderick V. Grace, M.D., New York  
Secretary Alfred H. Noehren, M.D., Buffalo

Wednesday, April 30—10:00 A.M.  
Hotel Statler, Meeting Room

- 1 Bleeding as a Late Sequela of Gastroenterostomy and Subtotal Gastrectomy of the Bilroth II Type for Duodenal Ulcer  
Ralph Colp, M.D., New York  
Sigmund Mage, M.D., New York  
Discussion Henry N. Kenwell, M.D., Buffalo
- 2 The Use of Powdered Sulfanilamide Locally in the Treatment of Peritoneal Infections  
R. Sterling Mueller, M.D., New York  
James E. Thompson, M.D., New York  
Discussion James C. Sullivan, M.D., Buffalo

- 3 The Preparation and Use of Desiccated Plasma by Mass Production Methods and Its Importance in Routine and Military Surgery  
Joseph M. Hill, M.D., Dallas, Texas (By invitation)  
Discussion Paul W. Searles, M.D., Buffalo

Thursday, May 1—10:00 A.M.  
Hotel Statler, Meeting Room

#### SYMPOSIUM SURGICAL TREATMENT OF GOITER

- 1 Indications for Operation—How to Differentiate Toxic Goiter from Conditions Simulating It  
George W. Cottis, M.D., Jamestown
- 2 The Use of Iodine in Preoperative and Postoperative Treatment  
Thomas B. Jones, M.D., Rochester
- 3 Technic of Thyroidectomy  
Frederick S. Wetherell, M.D., Syracuse
- 4 Many Stage Operation  
Martin B. Tinker, M.D., Ithaca  
Martin B. Tinker, Jr., M.D., Ithaca
- 5 Anesthesia in Goiter Surgery  
Oscar H. Stover, M.D., Buffalo
- 6 Surgical Complications and Their Treatment  
George E. Beilby, M.D., Albany
- 7 Exophthalmos—Modern Views on the Cause, Treatment, and Prognosis  
Summation Donald Guthrie, M.D., Sayre, Pennsylvania (By invitation)

#### SECTION ON UROLOGY

Chairman Leo E. Gibson, M.D., Syracuse  
Vice-Chairman Roy B. Henline, M.D., New York  
Secretary J. Sidney Rutter, M.D., New York

Tuesday, April 29—10:00 A.M.  
Hotel Statler, Room 338

#### SYMPOSIUM PYELONEPHRITIS

- 1 The Effectiveness of the Sulfonamides on the Bacteria Encountered in Infections of the Upper Urinary Tract  
Roscoe C. Borst, M.D., Utica
- 2 Chronic Pyelonephritis, an Incurable Disease—Importance of Prevention  
Reed M. Nesbit, M.D., Ann Arbor, Michigan (By invitation)
- 3 So-Called Pyelitis in Children  
Edgar A. Slotkin, M.D., Buffalo  
Discussion of Symposium Winfield W. Scott, M.D., Rochester, George E. Slotkin, M.D., Buffalo, Albert M. Crance, M.D., Geneva, and Francis N. Kimball, M.D., New York

- 4 The Practical Management of Infantile Eczema  
Earl D. Osborne, M.D., Buffalo

Thursday, May 1—10 00 A.M.  
Hotel Statler, Ballroom

- 1 The Part of the Private Pediatrician in School Health Program  
William E. Ayling, M.D., Syracuse
- 2 The Feeding of the Newborn Infant  
Charles Hendee Smith, M.D., New York
- 3 The Management of the Diabetic Child  
Priscilla White, M.D., Boston, Massachusetts (By invitation)
- 1 The Management of Feet Deformities in the Newborn  
Frederick R. Thompson, M.D., New York

### SECTION ON PUBLIC HEALTH, HYGIENE AND SANITATION

Chairman Ray D. Champlin, M.D., Oneonta  
Vice-Chairman Edward E. Gillick, M.D., Niagara Falls  
Secretary Frank E. Coughlin, M.D., Albany

Tuesday, April 29—10 00 A.M.  
Hotel Statler, Room 334

- 1 Restaurant Hygiene  
Walter D. Tiedeman, Albany (By invitation)  
Discussion Paul B. Brooks, M.D., Albany
- 2 A Rural Bedside Nursing Program  
Donald R. Davidson, M.D., Hancock  
Discussion Stanley W. Sayer, M.D., Gouverneur

### SYMPOSIUM

#### HEALTH EDUCATION FOR YOUTH ORGANIZATIONS

- 1 A Health Program for Youth Organizations  
J. G. Fred Hiss, M.D., Syracuse
- 2 A Demonstration of a County 4H Club Health Program  
Evelyn F. H. Rogers, M.D., Oneonta
- 3 The Physician's Part in the Program  
Thomas C. Monaco, M.D., Walton

Wednesday, April 30—2 00 P.M.  
Hotel Statler, Room 334

### SYMPOSIUM

#### MEDICAL PROBLEMS IN NATIONAL DEFENSE

- 1 From the Viewpoint of the Army Medical Officer  
Col. Charles M. Watson, M.D., Governor's Island (By invitation)
- 2 From the Viewpoint of the National Health Service  
Albert E. Russell, M.D., Governor's Island (By invitation)

- 3 From the Viewpoint of the State Health Department  
V. A. Van Volkenburgh, M.D., Albany
- 4 From the Viewpoint of the Physician in Civil Life  
John D. Naples, M.D., Buffalo

### SECTION ON RADIOLOGY

Vice-Chairman

Chester O. Davison, M.D., Poughkeepsie  
Secretary Foster C. Rulison, M.D., Syracuse

Wednesday, April 30—10 00 A.M.  
Hotel Statler, Room 334

### SYMPOSIUM

#### GASTROINTESTINAL ROENTGENOLOGY

- 1 An exposition of film-reading methods on selected and proved cases furnished by Roentgenologists throughout the state (Diagnosis to be withheld in each case from the leaders of the symposium until after analysis and opinion are given)  
Paul C. Swenson, M.D., New York  
E. Forrest Merrill, M.D., New York

Thursday, May 1—10 00 A.M.  
Hotel Statler, Room 334

- Address A Report of the Dutchess County Tumor Clinic  
Chester O. Davison, M.D., Poughkeepsie
- 1 Peroral X-Radiation in the Treatment of Mouth Cancer  
Hayes E. Martin, M.D., New York  
Discussion Walter L. Mattick, M.D., Buffalo
  - 2 Clinical—Physical Significance of Quality in Routine Tele-Radiation Therapy  
Walter T. Murphy, M.D., Buffalo  
Discussion Louis C. Kress, M.D., Albany

### SECTION ON REGIONAL AND GENERAL ANESTHESIA

Chairman John H. Evans, M.D., Buffalo  
Vice-Chairman John F. Kellogg, Jr., M.D., Rochester  
Secretary Milton C. Peterson, M.D., New York

Tuesday, April 29—9 00 A.M.  
Hotel Statler, Room 302

- Address of Welcome Herbert A. Smith, M.D., Buffalo  
Address Control of Pain and Discomfort by the Subcutaneous Injection of Oxygen  
John H. Evans, M.D., Buffalo
- 1 Prevention of Explosions of Anesthetic Mixtures by the Addition of Helium  
George J. Thomas, M.D., Pittsburgh (By invitation)

# Scientific Exhibits

April 28, 29, 30, May 1, 1941

The Committee William A. Krieger, M D, *Chairman*, Poughkeepsie,  
Alfred H. Noehren, M D, Buffalo, and Secretaries of Sections and Sessions

## Hotel Statler, Buffalo

### Lobby

Walter D. Tiedeman  
Chief, Bureau of Milk Sanitation  
New York State Department of Health  
Albany

**DEMAND CLEAN EATING AND DRINKING UTENSILS** Illustrates by means of photographs, proper methods of cleansing, handling, and storing of eating and drinking utensils. Demonstrates the visual and laboratory examination methods of checking the effectiveness of cleansing equipment, which when properly utilized will be effective in producing the results, is available for inspection.

### Lobby

Louis C. Kress, M D  
Director, Division of Cancer Control  
New York State Department of Health  
Albany

**PROGRESS IN CANCER CONTROL** Demonstrates, pictorially, the progress in establishing tumor clinics, in reporting, and in clinical activities.

Fillmore Room, and Parlors D and E

### 1

Alfred H. Noehren, M D  
E. Theodor Mueller, M D  
Elmer T. McGroder, M D  
Kenneth H. Eckhart, M D  
Leon H. Smith, M D  
Deaconess Hospital  
Buffalo

**THYROID EXHIBIT** Charts, specimens and slides. Cancer of larynx.

### 2

Guy E. Youngburg  
Department of Biological Chemistry  
University of Buffalo, School of Medicine  
Buffalo

**MINERAL RESIDUES FROM SILICOTIC LUNGS** A rack holding vials containing the acid insoluble ash from equal portions of 19 silicotic lung cases is shown. There are interesting and striking differences in the residues.

### 3

Section on Pathology and Clinical Pathology  
Medical Society of the State of New York  
(Buffalo Pathologists)  
William F. Jacobs, M D  
Ruell A. Sloan, M D  
Kornel L. Terplan, M D  
Samuel Sanes, M D  
Margaret Warwick, M D  
Barton F. Hauenstein, M D

Alphonse A. Thibaudeau, M.B.  
Eugene M. Burke, B S  
Norman W. Elton, M D  
Robert B. McClelland, D V M  
E. Theodor Mueller, M D

**FRESH PATHOLOGY DEMONSTRATION** Fresh tissues from current autopsies and surgical specimens obtained in Buffalo hospitals will be exhibited and explained by Buffalo pathologists. There will also be a demonstration of slide collections useful for the teaching of specialty pathology and veterinary pathology.

### 4

Norman W. Elton, M D  
Milton G. Potter, M D  
Irving W. Potter, M D  
Millard Fillmore Hospital  
Buffalo

**EVOLUTION OF THE UTERINE DEFECT OF CLASSICAL CESAREAN SECTION AND IMMEDIATE RESULTS OF AN IMPROVED SUTURE TECHNIC** Defects have been demonstrable in all uteri which have undergone section by the former multiple layer suture technic. These defects have been due to the creation of sinuses and fistulas of varying degree, attributable to the sloughing of muscle strangulated by sutures. Modification of the suture technic by the use of a single row of interrupted sutures placed only in the outer layer, with beveling of the wound edges, has resulted in a sharp reduction of morbidity in 50 cases.

### 5

Harry R. Trick, M D  
Department of Surgery  
University of Buffalo, School of Medicine  
Buffalo

**THE DYNAMICS OF ABDOMINAL HERNIAS** A moving picture of the forces concerned in the production of an indirect inguinal hernia and by postural changes showing that the same forces might produce any other type of abdominal hernia.

### 6

Oliver P. Jones, Ph.D.  
Department of Anatomy  
University of Buffalo, School of Medicine  
Buffalo

**EXPERIMENTS DEMONSTRATING THE PLACENTAL TRANSFER OF ANTIANEMIC PRINCIPLE** Graphs to illustrate the change in cell and nuclear diameter of embryonic blood from rats after the pregnant mother had been treated with oral and/or parenteral antianemic preparation.

Wednesday, April 30—2 00 P M

Hotel Statler, Room 338

1 The Effects and Clinical Use of Male Hormone Substances

James B Hamilton, M.D., New Haven, Connecticut (By invitation)

Discussion Raphael Kurzrok, M D, New York, and Thomas F Laurie, M D, Syracuse

2 Conservation of Renal Tissue

John E. Heslin, M.D., Albany

Discussion Roy B Henline, M D, New York, and Frederick J Parmenter, M.D., Buffalo

3 Blood Studies in Shock as a Guide to Therapy

John Scudder, M D, New York (By invitation)

Discussion Paul W Searles, M D, Buffalo, William C Eikner, M D, Clifton Springs

## SESSIONS

(Session meetings shall begin promptly at the hour specified)

### SESSION ON HISTORY OF MEDICINE

Chairman Emerson C Kelly, M D, Albany  
Vice-Chairman George Rosen, M.D., Brooklyn  
Secretary Edward F Hartung, M D, New York

Wednesday, April 30—2 00 P M

Hotel Statler, Meeting Room

- 1 Helmholtz in Medicine  
Elliott B Hague, M.D., Buffalo
- 2 Horace Nelson and His Lancet  
Leonard J Schiff, M.D., Plattsburg
- 3 Adirondack Medicine—A Historical Outline  
LeRoy H Wardner, M D, Saranac Lake
4. General John Cochran  
T Wood Clarke, M D, Utica

### SESSION ON PHYSICAL THERAPY

Chairman  
Madge C L McGunness, M D, New York  
Secretary Harold J Harris, M D, Westport

Tuesday, April 29—10 00 A M

Hotel Statler, Georgian Room

- 1 The Significance of Muscular Balance in Acute Disorders of Posture and Locomotion  
Henry H Jordan, M.D., New York
- 2 Therapeutic Relaxation  
Jerome Weiss, M D, Brooklyn  
Hans J Behrend, M D, New York  
Discussion of Papers 1 and 2 George G Martin, M D, Buffalo, Joseph A. E Syracuse, M D, Buffalo
- 3 Ultraviolet Irradiation of Autotransfused Blood in the Treatment of Acute Pyogenic Infections  
George P Miley, M.D., Philadelphia (By invitation)  
Discussion Elmer W Rebbeck, M D, Pittsburgh (By invitation)
4. The Role of Spas in Medical Preparedness  
Walter S McClellan, M.D., Saratoga Springs  
Discussion Allen W Holmes, M D, Penn Yan

## ROUND TABLE CONFERENCE ON TUMOR CLINICS

Under the auspices of the Medical Society of the State of New York a meeting will be held in the Iroquois Room under the chairmanship of Louis C Kress, M.D., Director of the Division of Cancer Control, State Department of Health. All those at present concerned with tumor clinics in the hospitals throughout the State, and others who may be interested, are invited to

attend this discussion period. The various problems that have arisen and others that may arise will be considered. It will greatly assist if those interested will send in by mail to Dr Kress, at the Division of Cancer Control, New York State Department of Health, 152 Washington Avenue, Albany, any questions that they would like to have discussed.

Dissection of a freshly enucleated eye in Locke's solution at body temperature, gross anatomy seen in passing

# 18 (Viewing Box 22)

Elmer H. Loughlin, M.D.  
Samuel H. Spitz, M.D.  
Richard H. Bennett, M.D.  
Long Island College of Medicine  
Long Island College Hospital  
Brooklyn

**PNEUMOCOCCAL LOBAR PNEUMONIA (1)**  
Etiologic Diagnosis, showing charts and transparencies, (2) Clinical Diagnosis, charts, transparencies and x-rays, (3) Treatment, prophylaxis, general treatment, specific treatment (serum, chemotherapy and combined therapy), charts and moulages, (4) Complications, charts describing the complications and résumés of the treatment, (5) Technical Methods, bacteriology, methods of administration of serum and drugs.

# 19

Stockton Kimball, M.D.  
Ramsdell Gurney, M.D.  
Kornel L. Terplan, M.D.  
Morton H. Lipsitz, M.D.  
Buffalo General Hospital  
Buffalo

**UNUSUAL VASCULAR LESIONS WITHIN THE ABDOMEN** Pathologic specimens, photographs and drawings, slides, clinical findings in a series of intra-abdominal vascular lesions, including periaortitis nodosa, malignant hypertension, aortic aneurysm (luteal and arteriosclerotic), thrombosis of various intra-abdominal vessels

# 20

J. Graham Edwards  
Department of Anatomy  
University of Buffalo, School of Medicine  
Buffalo

**THE VASCULAR POLE OF THE GLOMERULUS IN THE KIDNEY OF THE NORMAL AND HYPERTENSIVE DOG AND MAN** Illustrations and microscopic demonstrations of unique structures at the vascular pole of the glomerulus in the normal and hypertensive dog and man. Structures demonstrated (a) the wall of the terminal portion of the afferent arteriole, (b) a cluster of cells between the afferent and efferent arterioles, (c) a modified portion of the wall of the renal tubule in contact and co-extensive with this cluster of cells

# 25

William A. Brumfield, Jr., M.D.  
Director, Division of Syphilis Control  
New York State Department of Health  
Albany

**SYPHILIS CONTROL** Syphilis, clinical advances and progress in control depicted by photographs, charts, and dioramas.

# 26

A. Benson Cannon, M.D.  
Vanderbilt Clinic  
New York

**INFECTIOUS DISEASES OF THE SKIN** Colored lantern-slide demonstration of Impetigo, Scabies, Tinea, Erysipelas, etc. Demonstration of causa-

tive organisms where possible. Differentiation of some infectious diseases from closely resembling noninfectious conditions. For example, acne vulgaris from acne of bromoderma

# 27 (Viewing Boxes 36, 37, 42)

Edward O. Finestone, M.D.  
Harlem Hospital  
New York

**URINARY EXTRAVASATION (PERIURETHRAL PHLEGMON)** About sixty transparencies of diagrams, photos, and x-rays based on experimental and clinical study which have revealed a new concept of the pathogenesis of this disease. Based on this new concept a rational approach to treatment has been evolved.

# 28 (Viewing Box 35)

Section on Industrial Medicine and Surgery  
Medical Society of the State of New York

Irving Gray, M.D.  
Irving Greenfield, M.D.  
John J. Wittmer, M.D.  
James H. Sterner, M.D.

**SECTION ON INDUSTRIAL MEDICINE AND SURGERY** Benzol Poisoning, Employee Health Education, and a Practical Demonstration of Maximum Allowable Concentrations of Toxic Material

# 29

E. Hoyt DeKleine, M.D.  
Claire L. Strath, M.D. (Detroit, Michigan)  
Buffalo General Hospital  
Buffalo

**PLASTIC SURGERY IN CHILDREN** Photographic exhibit of plastic surgical problems of childhood with special emphasis on the psychologic abnormalities of afflicted children, together with drawings and captions showing principles of technic used in correction of deformities shown

# 30 (Viewing Box 38)

Harold J. Harns, M.D.  
Westport

**BRUCELLOSIS (UNDULANT FEVER)** Series of charts, radiographs, Kodachrome transparencies, photomicrographs, and photographs

# 31

Mortimer M. Kopp, M.D.  
Lutheran Hospital  
Brooklyn

**RHINOPLASTIC SURGERY** Photographic transparencies and all forms of rhinoplastic procedures. Moulages demonstrating subcutaneous structures and procedures

# 32

James Watson White, M.D.  
Harold Whately Brown, M.D.  
New York Post-Graduate School and Hospital  
New York

**TYPES OF STRABISMUS** The exhibit is composed of photographs of the various types of strabismus, grouped and classified as much as possible with a growing exhibit. Some are shown corrected, partially corrected or unaffected by glasses. Examples of paralysis, more or less marked, of each of the extraocular

7

William F Jacobs, M D  
Ruell A. Sloan, M.D  
Edward J Meyer Memorial Hospital  
Buffalo

MUSEUM SPECIMENS Specimens that will be  
of interest to the general practitioner

8

Emery A. Rovenstine, M.D  
New York University College of Medicine  
New York

THE INCIDENCE OF POSTOPERATIVE RESPIRA-  
TORY COMPLICATIONS A model of wooden  
blocks compares the incidence of respiratory  
complications with particular regard to anes-  
thesia.

9

Ernest Witebsky, M D  
Philip Wels  
Anne Heide

Department of Pathology and Bacteriology  
University of Buffalo, School of Medicine  
Buffalo General Hospital  
Buffalo

LABORATORY DIAGNOSIS OF TRICHINOSIS  
The serodiagnosis of trichinosis by means of  
complement fixation is demonstrated. In addi-  
tion, rats infested with *Trichinella spiralis* are  
shown and muscle specimens containing the  
larvae are demonstrated

10 (Viewing Box 24)

Charles W Bethune, M D  
Buffalo Health Department  
Buffalo

BUFFALO HEALTH DEPARTMENT EXHIBIT  
Radiographs of unique cases from chest clinic,  
moulages of venereal cases from syphilis control,  
diagnostic cultures, etc., from laboratory, charts  
and graphs from child hygiene and vital statis-  
tics

11

Charles C Herger, M D  
Hans Sauer, M.D

Department of Urology  
New York State Institute for the Study of  
Malignant Disease  
Buffalo

CARCINOMA OF THE BLADDER X-ray studies  
of carcinoma of the bladder Demonstration  
of filling defects before treatment and, later,  
the healed lesions following treatment Demon-  
strated changes in the upper urinary tract  
when the lesion involves the ureteral openings.  
Cystoscopic pictures, photomicrographs of sec-  
tions and treatment followed. Statistical tables  
showing grouping of cases and results obtained

12

Abner I Weisman, M.D  
Christopher W Coates  
Jewish Memorial Hospital  
The New York Aquarium  
New York

A NEW TEST FOR PREGNANCY (The *Xenopus*  
"Frog" Test) The exhibit consists of an ex-  
planation and description of the *Xenopus* (frog)

test for pregnancy The method of urine ex-  
traction and the methods of injection of the  
*Xenopus* are gone into in detail. Actual demon-  
strations of the pregnancy test will be performed  
daily The positive and negative reactions will  
be differentiated clearly Although many new  
tests have been suggested in recent years as  
being superior to the A-Z test, none has been  
proved to be of much worth except this *Xenopus*  
test The *Xenopus* test for pregnancy is not  
only as accurate as the A-Z or Friedman test  
but is far superior in many instances, since it is  
rapid, economical, and simple to perform  
The extruded eggs are easily visualized in a posi-  
tive reaction A positive reaction can be ob-  
tained in from six to eighteen hours

13 (Viewing Box 23)

Albert A. Cinelli, M D  
Manhattan Eye, Ear and Throat Hospital  
New York

PLASTIC SURGICAL PRINCIPLES IN EAR, NOSE,  
AND THROAT Exhibit will depict the basic  
principles involved in plastic surgery of oto-  
rhinolaryngology Diagrams, photographs be-  
fore and after, transparencies, etc., will aid  
greatly in the demonstration

14

Walter S McClellan, M.D  
Saratoga Springs Authority  
Saratoga Springs

CLINICAL STUDIES WITH NATURALLY CAR-  
BONATED SALINE-ALKALINE MINERAL WATERS  
The charts illustrate studies of the influence of  
the carbon dioxide bath on the peripheral cir-  
culation, the effect of the ingestion of these  
waters on the pH of the urine, and the changes  
in hemoglobin and red cell count observed  
during the "cure" regimen

15

Milton S Lloyd, M.D  
Joseph A. Budetti, M D  
City of New York Municipal Sanatorium  
Ossville

PHYSICAL FINDINGS IN BRONCHOSCOPY IN  
RELATION TO COLLAPSE THERAPY OF THE LUNG  
Transparencies of chest x-rays and contempo-  
raneous physical findings at bronchoscopy indi-  
cating their correlation for the guidance of the  
collapse therapist

16

Charles E Woods, M D  
Meadowbrook Hospital  
Hempstead

NEW METHOD OF SHOULDER DELIVERY  
Moving pictures demonstrating, with models,  
underlying mechanical principles and actual  
delivery

17 (Viewing Box 21)

Henry Minsky, M.D  
Mount Sinai Hospital  
New York

"LIGAMENTUM" HYALOIDEA-CAPSULARE  
ATTACHMENT OF LENS TO VITREOUS Demon-  
stration tending to prove the lens is more firmly  
attached to the vitreous by the "ligamentum",  
hyaloidea-capsulare than to the zonular fibres

Dissection of a freshly enucleated eye in Locke's solution at body temperature, gross anatomy seen in passing

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muscles are shown, as well as the postoperative results in many Congenital anomalies include retraction syndrome, strabismus fixus, congenital paralyses and spasms, also paralyses of convergence

33

Morton I Berson, M.D.

The Downtown Hospital, Pan-American Clinic  
New York

PLASTIC AND RECONSTRUCTIVE SURGERY  
Exhibit of colored photographic transparencies, diagrams, and moulages showing anatomic structures and various stages in the surgical procedures for corrective rhinoplasty, mammoplasty, free skin grafts, and correction of other disfigurements with end results

34

William Z Fradkin, M D  
Jewish Hospital of Brooklyn  
Brooklyn

CHRONIC ULCERATIVE COLITIS Charts, models, specimens, and instruments illustrating the predisposing factors—etiology, diagnosis, and treatment of chronic ulcerative colitis

35 (Viewing Boxes 44, 45)

A. H. Aaron, M D  
Edward D Cook, M D  
William F Lipp, M D  
Fraser D Mooney, M.D  
Henry M Murphy, M D  
Buffalo General Hospital  
Buffalo

GASTROSCOPY Demonstration of the gastro-  
scope in a model stomach Transparencies

showing the various types of pathology as  
seen gastroscopically Charts showing statistical  
studies of gastric diseases

39

Chester O Davison, M.D  
Dutchess County Tumor Clinic  
Vassar Brothers Hospital  
Poughkeepsie

DUTCHESS COUNTY TUMOR CLINIC Charts,  
photographs, and x-ray films explaining the work  
of this particular tumor clinic

40

New York State Medical Library  
Albany

NEW YORK STATE MEDICAL LIBRARY Medi-  
cal books and periodicals, posters, etc

(Viewing Boxes 46, 47, 48)

Kornel L Terplan, M D  
Edward C Koenig, M.D  
Buffalo General Hospital

ANATOMIC X-RAY STUDIES IN TUBERCULOSIS.

State Institute for the Study of Malignant  
Disease, Buffalo

William S Murray, Sc.D, Buffalo

Demonstrations (1) Behavior of a cancer  
stimulating principle which is transmitted  
through the mother's milk in mice, (2) possi-  
bilities of parabiosis as a means of studying the  
effects of blood-borne stimulants or depressants

Burton T Simpson, M D, Buffalo

NEW RADIOLOGIC APPARATUS AT THE IN-  
STITUTE

## Scientific Motion Picture Exhibit

William A Krieger, M D, *Chairman*, Poughkeepsie, Alfred H Noehren, M D, Buffalo  
Ballroom Foyer of Hotel Statler

The Dynamics of Abdominal Hernias

Harry R. Trick, M.D

Operative Technic Employed in Nasal Plastic Surgery

Albert A. Cinelli, M.D

New Method of Shoulder Delivery

Charles E Woods, M D

Ligamentum Hyaloidae Capsulare

Henry Minsky, M.D

The Syringe Technic in the Administration of Old Arsphenamine

The Treatment of Neurosyphilis by Intra-  
spinal Injection of Arsphenamized  
Serum—Swift Ellis

A. Benson Cannon, M.D

Urinary Extravasation (Periurethral Phlegmon)

Edward O Finestone, M D

Types of Strabismus

James Watson White, M D

Reconstruction of Auricle for Complete Ab-  
sence Free Skin Graft for Extensive

Nevus of Face and Web Scar Contractures  
of Elbow

Morton I Berson, M D

Chronic Ulcerative Colitis  
William Z Fradkin, M D

Gastroscopy

A H. Aaron, M D

The Present-Day Treatment of Varicose  
Veins

William M Cooper, M D

Subcutaneous Injection of Oxygen

John H Evans, M D

Clinic on Petrositis with Meningitis Otopscopy  
Ralph Almour, M D

Postencephalolytic Parkinsonism

Josephine B Neal, M.D

Stanley M Dillenberg, M.D

Intravenous Pentothal Sodium  
Abbott Laboratories

Coramine

Ciba Pharmaceutical Products, Inc.

# Technical Exhibits

Hotel Statler, Seventeenth Floor, April 28-May 1

THE dictum, "There is Nothing New Under the Sun," cannot be applied to the technical exhibits of the 1941 annual meeting. For, as you will see on the seventeenth floor of the Hotel Statler, there are new developments and products in many of the various fields. These merit your closest attention, for about none can you afford to be uninformed. Therefore, you are urged to set aside a definite time during the Buffalo meeting to inspect these displays.

Descriptions of the exhibits are listed below in alphabetical order. Necessarily brief, they give but a fraction of the information that you will get from a personal visit. The exhibits will be located near the Registration Desk where, of course, you will go upon arrival to receive your badge admitting you to all scientific sessions.

Abbott Laboratories, North Chicago (Booth 68), most heartily invite you to stop at their exhibit to discuss the newer specialties with Abbott-Trained Representatives in attendance. The wide assortment of newer products displayed merits your attention and study and your questions are solicited. Description of the items being shown is prohibited for lack of space, so—

passed quality Biolac, the distinctive new liquid infant food, Beta Lactose, Dryco, Klim, Merrell-Soule Products, and Irradiated Evaporated Milk.

Burroughs Wellcome & Co (U S A.) Inc., New York (Booth 43), presents a representative group of fine chemicals and pharmaceutical preparations, together with new and important therapeutic agents of special interest to the medical profession.

American Hospital Supply Corporation, Chicago and New York (Booth 52), is displaying Plasma, its simple and inexpensive preparation, Baxter's Closed Technique for Indirect Transfusion, Sulphanilamide in Vacolters and many new, interesting specialties, designed and developed to save the time and care of busy administrators at its exhibit.



Cambridge Instrument Company, Inc., New York (Booth 67), will feature as part of a complete exhibit of Cardiac Diagnostic instruments, the compact, lightweight, portable "Simpli-Trol" Electrocardiograph - Stethograph that produces electrocardiogram and stethogram separately or simultaneously. A new portable instrument (illustrated), which automatically indicates and records blood pressure continuously, will also be displayed.



W. A. Baum Co., Inc., New York (Booth 50), who have devoted twenty-five years exclusively to the origination and making of blood-pressure apparatus, will display their complete line of Baum-anometers and Latex replacement parts. The new STANDBY, a practical floor model designed primarily for office work, will be featured. You are cordially invited to consult a Baum representative on your blood-pressure instrument problems.



The Coca-Cola Company, Atlanta (Booth 36), will serve ice-cold Coca-Cola to the delegates with its compliments.

J. Beeber & Co., New York (Booth 16)

The Borden Company, New York (Booth 2), invites you to visit their display to learn about Borden's new Prescription Product for vaginal therapy—Betanal Vaginal Capsules, whose four-point action helps restore normal vaginal defenses. Also exhibited are infant foods of unsur-



Davies, Rose & Company, Ltd., Boston (Booth 55), hope that you will visit their headquarters. The preparations that this firm is exhibiting have a worldwide reputation. Physiological or chemical tests are made to assure their standardization. Clinical experience vouches for their dependability. Mr. H. V. Orne, well known to many of the members, will be at the booth to welcome you.

F. A. Davis Company, Philadelphia (Booth 65), suggests that you spend your spare time at their exhibit where you may examine without interference such outstanding new publications.

as *Medical Diagnosis and Symptomatology*—Loewenberg, *The Diagnosis and Treatment of Cardiovascular Disease*—Stroud, *Clinical Tuberculosis*—Goldberg, *The Cyclopedia of Medicine, Surgery, and Specialties, Clinical Endocrinology, and others*

R. B. Davis Company, Hoboken, New Jersey (Booth 62), invites you to enjoy a drink of delicious Cocomalt at their exhibit. Cocomalt is refreshing, nourishing, and of the highest quality. It is fortified with Vitamins A, B<sub>1</sub>, and D, Calcium, and Phosphorus to aid in the development of strong bones and sound teeth, Iron for blood, Protein for strength and muscle, Carbohydrate for energy.



The Denver Chemical Mfg Co, New York (Booth 85), will exhibit Antiphlogistine. This is employed by physicians in all parts of the world. Galatest, the new micro-reagent for the instantaneous detection of urine sugar, will be demonstrated. Be sure to see this demonstration.

Doak Company, Inc., Cleveland (Booth 80), pioneers in colloidal chemistry, are exhibiting the original colloidal Sulfur Diasporal as reported by Sullivan, Argy, Wheeldon, Senturia, Woldenberg, and others for treatment of chronic arthritis. Information for determination of cystine sulphur furnished, together with necessary reprints. They are also showing a number of dermatological specialties.

The Doho Chemical Corporation, New York (Booth 39) Animated Pathological Ear Exhibit—the Auralgan Exhibit consists of a model of the human auricle four feet high together with a series of twenty-four three-dimensional ear drums, modeled under the supervision of outstanding otologists. Each of these drums depicts a different pathological condition based upon actual case observation.

Duke Laboratories, Inc., Stamford, Conn (Booth 46), will demonstrate the original American-made, stretchable, adhesive-surfaced bandage, Elastoplast, suggested whenever compression and support are required. Samples of Medi-plast, the Elastoplast speed compress and Elastoplast Occlusive Dressings, used in the treatment of minor injuries, may be had, also samples of Nivea and Basis Soap—the prescriber's cosmetics.

E & J Resuscitator Company, Inc., New York (Booth 69)

J H Emerson Co, Cambridge, Mass. (Booth 8), will show the Emerson Resuscitator, Inhalator, and Aspirator—a single unit with three distinct functions with simple operation involving no leather cups, pistons, or



oil, and the latest model Emerson Respirator with the new Orthopedic Attachment, designed for use with any model Emerson Respirator.

H G Fischer & Co, Chicago (Booth 7), are displaying their 1941 models of x-ray and short-wave apparatus which are so distinctive, both in improved performance and, in various instances, greatly lowered in price, that every physician should consider inspection a convention obligation. The complete H G Fischer & Co line includes shockproof x-ray apparatus, short wave units, combination cabinets, galvanic and wave generators, ultraviolet and infrared lamps and many other units, accessories, and supplies.



C B Fleet Co, Inc., Lynchburg, Va (Booth 63) Phospho-Soda (Fleet) is a highly concentrated and purified, aqueous solution of sodium phosphates. It is nontoxic, rapid but mild in action without irritation of the gastric or intestinal mucosa. Indicated for hepatic dysfunction, and for its thorough eliminating and cleansing action on the upper and lower gut.

The Foregger Co Inc., New York (Booth 20), is featuring anesthesia apparatus of new and distinctive design, resuscitation apparatus, and oxygen therapy equipment. The new O.F. type anesthesia apparatus is even more rugged and durable than previous models, simpler to operate and maintain, with finer regulation, improved visibility, and increased safety.

General Electric X-Ray Corp, Chicago (Booths 44 and 45)

Gerber Products Company, Fremont, Mich (Booth 19), have added several new varieties to both Gerber's Strained and Junior Foods and will display them at their exhibit. They invite examination of the booklets for mothers and of the professional literature.



Harold Surgical Corp, Albany and New York (Booth 34), will exhibit a complete line of short-wave apparatus of the latest design, electrocardiographic apparatus, Basal Metabolism Machine, and a new combination X-Ray Unit. A trained technician will be available at all times to explain the apparatus and this firm will also exhibit a number of new surgical and medical supplies which will be of interest to the profession. The Albany office will be represented by Mr H H Kestenbaum, and Mr Sam Mehlinger will be in attendance from the New York office.

H J Heinz Co, Pittsburgh (Booth 14), appreciates the confidence which the members of the Medical Society of the State of New York have expressed in their recommendation of Heinz

Strained and Junior Foods for infant feeding and special diets. Some of these foods are on display at their exhibit as well as various literature—newest of which is the Nutritional Chart, 9th edition, and Nutritional Observatory. Miss Alice Yakulis and Mr. H. N. Harris are at your service and will welcome members and friends at the exhibit.

Holland - Rantos Company, Inc., New York (Booth 35), will graphically illustrate with a motion picture modern contraceptive technique and will demonstrate at their display all the various contraceptive materials including both the Koromex and Hyva diaphragms, Koromex and H-R Emulsion jelly, together with the most complete line of contraceptive specialties.



Horlick's Malted Milk Corporation, Racine, Wis. (Booth 48), invites you to visit their exhibit of Horlick's, the Original Malted Milk, powder and tablets. Horlick's is a distinctive natural food combination containing the basic nutritive principles of full-cream milk and malted grain. Its ease of digestion, freedom from fiber and roughage, together with its rich calcium and phosphorus content, particularly recommend it to the physician.

Hyson, Westcott & Dunning, Inc., Baltimore (Booth 33), will exhibit Mercurochrome which is prominent among their products to be displayed and is now in the twenty-first year of its acceptance by the Council on Pharmacy and Chemistry of the American Medical Association. Thantiss Lozenges, Cobra Venom Solution, and Lutein Solution Ampules will also be shown, in addition to the diagnostic solutions and apparatus supplied by the manufacturers. The clinical effectiveness of Lutein Solution, an aqueous extract of corpus luteum, in the treatment of many menopausal disturbances and its effectiveness in obstetrical complications will be illustrated by especially prepared diagrams. Visiting delegates are invited.



Jeffrey-Fell Company, Buffalo (Booths 82, 83 and 84). Purveyors to the medical, hospital and nurses profession for more than half a century will display and demonstrate rare and select surgical and scientific instruments, drugs and sundries, known to modern science, representing the products of the most representative manufacturers in the United States and abroad. They specialize in the distribution of the products of Wilmot Castle Co., Rochester, N. Y., sterilizing equipment for office and hospital, Burdick Corp., Milton, Wis., complete physiotherapy equipment, Wiesner-Rapp Co., Inc., Buffalo, modern aluminum iron lung, Jones Metabolism Equipment Co., Chicago, simplified scientific metabolism equipment, and Gomco

Surgical Mfg. Corp., Buffalo, scientific instruments and apparatus.

You are cordially invited to visit their store at 1700 Main St., Buffalo. Telephone Garfield 1700.

"The 'Junket' Folks," Chr. Hansen's Laboratory, Inc., Little Falls, New York (Booth 17), serve rennet-custards made with either "Junket" Rennet Tablets or "Junket" Rennet Powder. There is also a display of "Junket" Brand Food Products. Enlarged photographs show how the rennet enzyme in rennet-custards transforms milk into softer, finer curds. Rennet-custards are widely recommended for infants, children, convalescents, postoperative cases and as a delicious, healthful dessert for the whole family. Fully informed attendants on duty.

Kalak Water Co. of New York, Inc., New York (Booth 58). If you are interested in inhibiting the distressing side effects associated with the administration of sulfonamides, salicylates, iodides, arsenicals, etc., drop around to the Kalak Water Co.'s exhibit. While enjoying a refreshing drink of this crystal-clear, sparkling water, ask the representative how Kalak Water may be employed to buffer the untoward effects of these drugs.



The Kelley-Koett Mfg. Co., Inc., Covington, Ky. (Booths 3, 4, and 5).

Kellogg Company, Battle Creek, Mich. (Booth 9). Kellogg's ready-to-eat cereals have an important part in the dietary program. Corn Flakes and Rice Krispies are included freely in wheat-free and low residue diets. Pep has been enriched with vitamins B<sub>1</sub> and D. Kellogg's other whole wheat and bran cereals—Wheat Krispies, Krumbles, Shredded Wheat, All-Bran and Bran Flakes—are rich in minerals and vitamin B, too. Reprints covering recent research with bran and nutrition leaflets are available at their exhibit.



Laboratory Natvelle, New York (Booth 73), will exhibit Digitaline Cristallisee Natvelle, a purified principle of digitalis purpurea. In attendance will be a representative qualified to discuss the pharmacological and clinical studies recently conducted and published surrounding Digitaline Cristallisee Natvelle. The purified principles of digitalis are attracting much attention. They will consider it a privilege to discuss the properties of this purified principle with you.

Lea & Febiger, Philadelphia (Booth 54), will exhibit among their new works Kraines' *Neuroses and Psychoses*, Portis on *The Digestive System*, Denmie and Pakula on *Congenital Syphilis*, Lewin on *The Foot and Ankle*, Rony on *Obesity and Leanness*, Packard, Hayes, and Blanchet on *Artificial Pneumothorax*, and Adair's *Obstetrics and Gynecology*. New editions will be shown of Boyd's *Pathology of Internal Diseases*, Craig and Faust's

*Parasitology*, Stimson on the *Common Contagious Diseases*, Haden's *Hematology*, Cushny's *Pharmacology*, Fishberg on *Heart Failure*, Joslin's *Treatment of Diabetes Mellitus*, and Peter on *Extra-ocular Muscles*

Lederle Laboratories, Inc., New York (Booth 53), are featuring their Hay Fever Products and the Tuberculin Patch Test (Vollmer) Lederle, Vi-Ferrin, Tetanus Toxoid, the new improved Staphylococcus Toxoid Digest-Modified, Bellabulgara, and Vitamin B Complex. Another feature of the Lederle display will be a large transparency showing their Research and Production Laboratories at Pearl River from the air, with a description of the various units. Regular Lederle staff attendants will be on hand for discussion with the doctors.

Lehn & Fink Products Corporation, Bloomfield, New Jersey (Booth 70). Amphyl display shows by means of excellent laboratory photographs that this antiseptic and germicide is noninjurious, nonspecific, and economical. Look at those graphic real-life photographs and charts. One of their outstanding chemists will answer all your queries at the exhibit.

Lepel High Frequency Laboratories, Inc., New York (Booth 18), will have on display their latest models of short-wave, ultraviolet, and galvanic sinusoidal apparatus. You are cordially invited to visit this display and see the latest in physical-therapy equipment. Questions on technical problems will be cheerfully answered.

Libby, McNeill & Libby, Chicago (Booth 27)

The Liebel-Flarsheim Co., Cincinnati, Ohio (Booth 51), will exhibit a line of short-wave generators as well as the famous Bovie Electro - Surgical Units, and other new and useful electromedical apparatus. A cordial invitation is extended to you to stop at this display and have the equipment demonstrated to you.

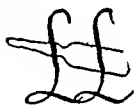


Eli Lilly and Company, Indianapolis, Ind (Booth 60), will demonstrate the germicidal efficacy of "Merthiolate" (Sodium Ethyl Mercuri Thiosalicylate, Lilly) and the compatibility of the antiseptic with body cells and fluids. Other new and useful products will be featured.

J B Lippincott Company, Philadelphia (Booth 23), will have on display Kugelmann's *Newer Nutrition in Pediatric Practice* and Becker and Obermayer's *Modern Dermatology and Syphilology*, as well as *Functional Disorders of the Foot* by Dickson and Diveley which has already gone into a second printing. Leaman's brand new

book, *Management of the Cardiac Patient*, will also be displayed. Other interesting works include Thorek's *Modern Surgical Technique*, Ragler's *Outline of Roentgen Diagnosis*, Bar-borka's *Treatment by Diet*, and many others.

Loeser Laboratory, Incorporated, New York (Booth 87), display their line of Loeser Intravenous and Intramuscular Solutions and Organotherapeutic Products. We cordially invite the physicians to visit our booth.



T H McKenna, Inc., New York (Booth 77), will show the new and more important books of all American publishers, as well as many new British books. You are invited to compare the leading books available on each subject and make your OWN selection. Avail yourself of our temporary Buffalo branch.

Mead Johnson & Company, Evansville (Booths 25 and 26), will exhibit several new products in addition to Dextri-Maltose, Pabulum, and Oleum Percomorphum. They will also have on display various examples of the slogan "Servamus Fidem"—We Are Keeping the Faith.

The Medical Film Guild (Booth 78), specialists in the production and distribution of "Medical Films That Teach" will exhibit a large variety of new original clinical and diagnostic films with emphasis on gynecology, ear, nose, throat, and respiratory diseases. Mr J P Hackel will be glad to answer your photographic questions.

The C V Mosby Company, St Louis, Mo (Booth 31). Doctors attending the convention are cordially invited to visit their exhibit to inspect the new publications which will be on display. Outstanding new volumes on surgery, dermatology, heart diseases, x-ray, obstetrics, and gynecology, and practice of medicine will be shown. Browse through this new material at their display.

Mutual Pharmacal Company, Inc., Syracuse, New York (Booth 6), will exhibit special tablet products such as Liv-Ferrin, Vita-Liv-Ferrin, Ferrous Sulfate with Vitamins, Vitamin D Capsules, ABCDG Capsules, Eluxr and tablets of Thiamin Chloride, Ascorbic Acid, Nicotinic Acid, and other products of special interest.

Nutrition Research Laboratories, Chicago (Booth 30), will show by means of illuminated x-ray and lifelike plaster casts of actual case histories the successful results obtained from ERTRON therapy in the treatment of arthritis. Also featured will be BEZON, a Natural High Potency Vitamin B Complex.

Paine Hall School, New York (Booth 86)

Make it a point to stop in and clear up questions on Medical Assistants' their worth, salaries,

*Paine Hall*

# TECHNICAL EXHIBITS

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and hours. You will learn our students are trained in Laboratory Technique, Doctor's Office Practice, Medical Secretarial, X-Ray, First Aid, Medical Nomenclature, and Personal English. Obtain authentic information from trained directors

Parke, Davis & Company, Detroit, Mich (Booth 76), will feature in their exhibit the sex hormones, Theelin and Theelol, antisyphilitic agents, such as Mapharsen and Thio-Bismol, posterior lobe preparations, including Pituitrin, Pitocin, and Pitressin, and various Adrenalin Chloride Preparations

Pet Milk Sales Corporation, St Louis, Mo (Booths 71 and 72), will display an actual working model of a milk condensing plant in miniature. This exhibit offers an opportunity to obtain information about the protection of Infant feeding and its uses in Miniature Pet Milk cans will be given to each physician who visits the Pet Milk display



Petrolagar Laboratories, Inc., Chicago (Booth 28), offer, in addition to samples of the Five Types of Petrolagar, an interesting selection of descriptive literature and anatomical charts Ask the Petrolagar representative to show you the HABIT TIME booklet. It is a welcome aid for teaching bowel regularity to your patients

Philip Morris & Co, Ltd., Inc., New York (Booth 59), will demonstrate the method by which it was found that Philip Morris Cigarettes, in which diethylene glycol is used as the hygroscopic agent, are less irritating than other cigarettes. Their representatives will be happy to discuss researches on this subject and problems on the physiological effects of smoking

Picker X-Ray Corp, Buffalo and New York (Booth 13)

The Radium Emanation Corporation, New York (Booth 75), will exhibit a wide variety of instruments and applicators used in modern radium therapy, including permanent and removable composite, leakproof Radon Seeds. The advantages of these seeds will be demonstrated by magnified sections showing their constructions in detail.

Ralston Purina Company, Inc., St Louis, Mo (Booth 66), invites physicians to register at their exhibit for Low Calorie and Allergy Diets, wheat, egg and milk-free food lists, recipes and food diaries, Laboratory Reports on whole grains as a natural source of vitamins and minerals, samples of Ralston Ry-Krisp, the whole rye wafer



Riedel-de Haen, Inc., New York (Booth 12), will feature their pioneer bile acid preparations. Competent representatives will gladly discuss the latest findings on Decholin and Decholin sodium, Degalol, Cholmodin and other Riedel-de Haen products. Physicians are requested to register for their free copy of the third edition of the brochure, *Biliary Tract Disturbances*



Ritter Equipment Company, Inc., Rochester, New York (Booths 40 and 41), is a newcomer to the state exhibit this year. They introduced to the medical profession last summer an entirely new line of medical equipment, designed for both the specialist and the general practitioner. Included in their display will be Ear, Nose, and Throat Units, Chairs, Fluorescent Lights, Stools, Surgical Cuspidors, Sterilizers, Compressors, and Bone Surgery Engine. Picture shows the Ritter ENT Unit

S. M. A. Corporation, Chicago (Booth 42), has an interesting new display which represents their selection of infant feeding and vitamin products. Physicians who visit this exhibit may obtain complete information as well as samples of S. M. A. Powder and the special milk preparations—Protein S. M. A. (Acidulated), Alerdex and Hypo-Allergic Milk

Sanborn Company, Cambridge, Mass (Booth 74), is featuring the New Sanborn Cardiette with "Instomatic" Operation and a Double Check on "timing" Accuracy, the Stetho-CARDIETTE for simultaneous heart sound and electrocardiogram recording, the CARDIO-SCOPE for visual electrocardiography, and the 1941 WATERLESS Metabolism Tester offering improvements in convenience, in portability and in patient comfort through easier breathing

Sandoz Chemical Works, Inc., New York (Booth 64), are featuring Gynergen—(ergotamine tartrate) for the dramatic relief of migraine as well as dependable uterine hemostasis, Digiland—crystallized initial glycosides of Digitalis lanata, gravimetrically and biologically standardized, Calgluon and Neo-Calgluon for oral and parenteral calcium therapy, Bellergal, Bellandanol, and Bellafoline—sedatives of the neurovegetative system, Calcibronat—laren—cardioduretic principles of squill, Scilgin—a stable preparation of pure ergonovine tartrate, Neo-Gynergen—a balanced combination of ergotamine and ergonovine for obstetric and gynecologic use

W B Saunders Company, Philadelphia, and London, Eng (Booth 1), will have on display their complete line of books of interest to physicians and specialists. Of particular interest are Graybiel & White's *Electrocardiography in Practice* the new Griffith & Mitchell's *Pediatrics*, Krusen's new *Physical Medicine*, Novak's

*Obstetrical and Gynecological Pathology*, Walters & Snell's *The Gallbladder and Its Diseases*, advance sheets of the new (1941) Mayo Clinic Volume, Pelouze's *Office Urology*, the current series of the Medical Clinics of North America and of the Surgical Clinics of North America with their Symposia on common, everyday diseases and conditions, the new Cecil's *Medicine*, new Ewing's *Neoplastic Diseases*, Wilder's *Clinical Diabetes*, and a number of other important new books and new editions

Schering Corporation, Bloomfield, New Jersey (Booth 15) Their exhibit actually displays the entire group of highly advanced Schering hormone preparations (including Oretan-M, the new orally effective tablets for male hormone therapy), distinguished for their potency, absolute purity, and economy in actual practice. Members of the Medical Research Division are present to discuss endocrine or other problems. Attending representatives: Dr. Max Gilbert, Mr. N. P. Lombardi, Mr. Charles H. Witters, and Mr. F. O. Robbins.

Sharp & Dohme, Inc., Philadelphia (Booths 10 and 11), will feature in their new, modern and striking display "Delvinal" Sodium, "Lyovac" Bee Venom Solution, and other "Lyovac" biologicals. There will also be exhibited a group of new biological and pharmaceutical specialties prepared by this house, such as "Propadrine" Hydrochloride products, "Rabellon," "Padrophyl," "Riona," "Depropanex," and "Rubothron." Capable, well-informed representatives will be on hand to welcome all visitors and furnish information on Sharp & Dohme products.

Smith, Kline & French Laboratories, Philadelphia (Booth 47), will display their medical specialties at their exhibit. Messrs. H. O. Walton and A. B. Howe will be on hand to answer questions and furnish any information regarding the products that the physician may desire.

E. R. Squibb & Sons, New York (Booth 32), will feature a number of new and interesting Vitamin, Glandular, Biological and Chemotherapeutic specialties at their exhibit. Well-informed Squibb Representatives will be on hand to welcome you and to furnish any information desired on the products displayed.



R. J. Strassenburgh Co., Rochester, New York (Booth 29) Research is the life of the modern pharmaceutical industry. Because of its constant research, the R. J. Strassenburgh Company has progressed steadily for over fifty-five years—its contributions and service to the medical profession are responsible for its high standing. Visit their exhibit and see the latest developments in Strassenburgh Pharmaceuticals.



The Wander Company, Chicago (Booth 24) During the convention when you feel tired and

"let down" have a refreshing cup of Ovaltine at The Wander Company exhibit. Ovaltine is a food supplement enriched in vitamin and mineral content. Feel free to visit the Ovaltine booth often.

Westwood Pharmacal Corp., Buffalo, New York (Booths 56 and 57)

White Laboratories, Inc., Newark, New Jersey (Booth 21), will present White's Cod Liver Oil Concentrate Liquid, Tablet and Capsule (and White's Thiamin Chloride Tablets)—all Council-Accepted. Well-trained, courteous representatives will be in attendance to discuss the practical advantages provided by Cod Liver Oil Concentrate as an economical and convenient measure of Vitamins A and D prophylaxis and therapy. Pertinent information concerning our new knowledge of the vitamins and vitamin deficiency states, together with literature descriptive of the clinical merit of the products of White Laboratories, will be offered for the registrant's consideration.

Wilmot Castle Company, Rochester, New York (Booth 81) Safe Lighting and Sterilizing. The Castle Exhibit will show what's new in lighting and sterilizing equipment for the Physician's office. One item will be an examining light that is suitable in price for the physician, and yet has a host of the qualities of a big hospital light. Then, there will be the famous CAST IN BRONZE "Full-Automatic" sterilizers and autoclaves. These will be shown singly and recessed in cabinets.

Winthrop Chemical Company, Inc., New York (Booth 49), extends a cordial invitation to every member of the Medical Society of the State of New York to visit their exhibit where representatives will gladly discuss the latest preparations made available by this firm. Available to you are valuable booklets dealing with anesthetics, hypnotics, sedatives, antisyphilitics, diagnostics, diuretics, vasodilators, vitamins, anti-allergics, and others.

John Wyeth & Brother, Inc., Philadelphia (Booths 37 and 38), cordially invite you to visit their exhibit where the following pharmaceutical specialties will be displayed: Amphojel—Wyeth's Alumina Gel for the management of hyperacidity and peptic ulcer, A.B.M.C. Ointment—for the relief of Arthritic pain, Bepron—Wyeth's Beef Liver with Iron for the nutritional anemias, Bewon Elixir—a palatable appetite stimulant and vehicle, Duterra—Wyeth's vaginal lotion of Kaolin and Alumina, Kaomagma—Wyeth's magma of Alumina and Kaolin for the control of diarrhea and treatment of colitis, Silver Picrate—for the treatment of acute anterior urethritis and Trichomonas vaginalis.

The Zemmer Company Inc., Pittsburgh (Booth 22), extends a cordial invitation to every member of the Medical Society of the State of New York and guests to visit their exhibit where they will display a number of their leading pharmaceutical products.

# The Woman's Auxiliary

To the Medical Society of the State of New York

Headquarters—Terrace Room, Hotel Statler, Buffalo

[Additional Auxiliary news will be found on page 792]

## Officers

*President*, Mrs Luther H Kice, Garden City  
*President-elect*, Mrs George B Adams, Auburn  
*First vice-president*, Mrs Henry J Noerlung, Valatie  
*Second vice-president*, Mrs H L Gokey, Alexandria Bay

*Treasurer*, Mrs Carlton F Potter, Syracuse  
*Recording secretary*, Mrs J Emerson Noll, Port Jervis  
*Corresponding secretary*, Mrs Louis M Lally, Floral Park

## Convention Committee Chairmen

Mrs Carlton E Wertz, *General Chairman*  
*Acknowledgments*, Mrs Herbert E Wells  
*Dinner*, Mrs Patrick J Hurley  
*Entertainment*, Mrs Kenneth G Jahraus  
*Flowers*, Mrs Frederick E Sperry  
*Headquarters*, Mrs Lee R. Sanborn  
*Hospitality*, Mrs William Renne  
*Hobby Show*, Mrs Clarence J Durshordwe  
*House of Delegates*, Mrs Nelson W Strohm  
*Information*, Mrs. Harold F R. Brown

*Junior Ushers*, Mrs J Frederick Painton  
*Wednesday Luncheon*, Mrs Joseph D Godfrey  
*Printing*, Mrs Thomas J O'Brien  
*Publicity*, Mrs John W Eustace  
*Registration, Delegates*, Mrs Allen E Richter  
*Registration, General*, Mrs John D Napes  
*Resolutions*, Mrs Albert M Bell  
*Supplies*, Mrs Benjamin Smullen  
*Tea, Tuesday*, Mrs Francis M O'Gorman  
*Tickets*, Mrs Harold B Johnson

The Annual Convention of the Woman's Auxiliary to the Medical Society of the State of New York will be held on April 28, 29, 30, May 1, 1941, at the Hotel Statler, Buffalo

All doctors' wives, whether members of a Woman's Auxiliary to a County Medical Society or not, are urged to register at the Registration Desk in the Terrace Foyer, and are cordially invited to participate in all parts of the program

## Monday, April 28

9 00 A.M. Registration of Delegates—Terrace Foyer  
 9 00 A.M.—5 00 P.M. General registration for all doctors' wives, daily throughout the Convention—Terrace Foyer  
 9 00 A.M.—4 00 P.M. Registration for Auxiliary Dinner (7 00 P.M.)—Registration Desk, Terrace Foyer  
 9 00 A.M.—4 00 P.M. Registration for Auxiliary Tea (Tuesday, 3 00 P.M.)—Registration Desk, Terrace Foyer  
 9 30 A.M. Executive Board Meeting—Terrace Room  
 10 00 A.M. House of Delegates Meeting—Terrace Room  
 10 00 A.M.—10 00 P.M. Hobby Show—Library, Mezzanine Floor  
 11 30 A.M. In Memoriam Service—John Sturges, bantone—Terrace Room  
 2 00 P.M. House of Delegates Meeting—Terrace Room  
 Address by Louis H Bauer, M D  
 7 00 P.M. Dinner for Auxiliary members, all doctors' wives and lay friends—Main Ballroom (secure tickets at Registration Desk before 4 00 P.M.)  
 Guest Speaker—Mrs V E Holcombe, president, Woman's Auxiliary to the American Medical Association

Entertainment (following dinner)  
 "Mirth of a Nation," Reverend Arthur W Evans, D D

## Tuesday, April 29

9 00 A.M. Registration continued—Terrace Foyer  
 9 00 A.M. Postconvention Meeting of the Executive Board—Terrace Room  
 10 00 A.M.—10 00 P.M. Hobby Show—Library, Mezzanine Floor  
 3 00 P.M. Tea, Twentieth Century Club (secure tickets at Registration Desk before 11 00 A.M.)  
 Entertainment following tea—Musical  
 7 00 P.M. Dinner of the Medical Society of the State of New York, Main Ballroom

## Wednesday, April 30

9 00 A.M.—5 00 P.M. Registration continued—Main Lobby  
 10 00 A.M. Inspection Tour, Municipal Auditorium  
 10 00 A.M.—10 00 P.M. Hobby Show—Library, Mezzanine Floor  
 1 00 P.M. Luncheon—Speaker, A. H Aaron, M D., music, Mrs Clyde L Randall  
 4 00 P.M. Trip to Niagara Falls  
 Thursday, May 1  
 Call for hobbies  
 10 00 A.M.—12 Noon

# Women's Medical Society of New York State

Annual Meeting, Buffalo—April 28, 1941

THE annual meeting of the Women's Medical Society of New York State will be held on Monday, April 28, at the Town Club

On Sunday, April 27, breakfast will be served to all visiting women physicians from 10 00 A M until noon at the home of Dr Louise Beamis-Hood, 153 Bidwell Parkway, as the guests of the Women Physicians' League Transportation will be provided at one o'clock for a trip through the foothills of the beautiful Allegheny Mountains to the J N Adam Memorial Hospitals at Perryburg A program and supper have been planned through the courtesy of Dr Horace Lo Grasso and the Buffalo Board of Health Busses and cars will leave at one o'clock from 153 Bidwell Parkway

On Monday, April 28, at 9 30 A M there will be a business meeting at the Town Club, 805

Delaware Ave Luncheon will be from twelve-thirty to one-thirty

From 2 00 to 4 30 P M the following scientific program has been planned "The Diabetic Child," Agnes P McGavin, M D, "Problems in Giving Anesthesia," Rose M Lenahan, M D, "Review of 100 Cholecystectomies at New York Infirmary for Women and Children," Anna Hubert, M D, "Diagnosis of Common Type of Congenital Heart Disease," Gertrude H B Nicolson, M D, "Diagnosis and Treatment of Acneform Eruptions," Mabel G Silverberg, M D

From 6 30 to 7 30 P M there will be a reception in the Chinese Room of the Hotel Statler, with dinner following at 7 30 P M

ALICE STONE WOOLLEY, M D, *President*  
I M SCHARNAGEL, M D, *Secretary*

## Officers of the Women's Medical Society

### Honorary Presidents

Mary T Greene M D  
Helene J C Kuhlmann M D  
Rosalie Slaughter Morton M D  
Merion Craig Potter M D

### President

Alice Stone Woolley, M D  
29 S Hamilton St Poughkeepsie

### Vice Presidents

Marguerite P McCarthy M D  
102 Caroline Ave, Solvay  
Mary E Potter M D  
305 S Washington Ave, Brooklyn  
Lillian A Treat, M D  
51 Franklin St Auburn

### Treasurer

Alta Sager Green, M D  
30 S Cayuga St, Williamsville

### Secretary

Isabel M Scharnagel M D  
155 E 73rd St New York City

### Councillors

#### 1st District Branch

Isabel Knowlton M D  
80 Irving Place New York City

#### 2nd District Branch

Cora M Ballard M D  
95 Brooklyn Ave Brooklyn

#### 3rd District Branch

Isabelle F Borden, M D  
State Education Dept Albany

### 4th District Branch

Annetta E Barber, M D  
8 Notre Dame St Glens Falls

### 5th District Branch

Clara H Pierce M D  
127 Harding Place Syracuse

### 6th District Branch

Anna M Stuart M D  
656 Park Pl Elmira

### 7th District Branch

M Louise Hurrell M D  
277 Alexander St Rochester

### 8th District Branch

Katherine F Carnivale, M D  
454 Porter Ave, Buffalo

### Honorary Councillors

Helene J C Kuhlmann, M D  
Marion Craig Potter, M D  
Maud J Frye, M D  
Emily Dunning Barringer, M D  
Lois L Gannett, M D  
Eether Parker M D  
Mary Dunning Rose M D  
Ethel Doty Brown M D  
Rosalie Slaughter Morton M D  
Anna H Voorhis M D  
Daisy M O Robinson M D  
Louise Beamis Hood M D  
Marion S Morse M D  
Mary J Kazmierczak M D  
Clara H Pierce M D  
Elise S L Esperance, M D  
Madge C L McGuinness, M D

### Honorary Members

Meude E Abbott M D, Montreal  
Canada  
Catherine Macfarlane M D Phila  
delphia, Pa  
Kate B Karpeles M D, Washington,  
D C  
Mrs Margaret H Rockhill Cincin-  
nati Ohio

### CHAIRMEN OF COMMITTEES

#### Scientific Program

Theresa Scanlan M D  
133 E 58th St, New York City

#### Legislative

Louise Beamis Hood, M D  
153 Bidwell Parkway, Buffalo

#### Medical Education

Mary T Greene M D  
Castile N Y

#### Public Health

Sophie Rabinoff M D  
130 W 86th St New York City

#### Public Relations

Mary J Kazmierczak, M D  
957 Sycamore St., Buffalo

#### Membership

M Elizabeth Howe, M D  
30 E 40th St New York City

#### Resolutions

Helen G Walker M D  
2029 Main St Buffalo

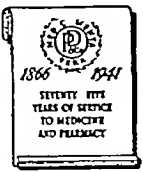
#### Publicity

Mary J Kazmierczak M D  
957 Sycamore St., Buffalo

# THESE NAMES, THESE YEARS HAVE HELPED MAKE MODERN MEDICAL HISTORY

One of a series of advertisements  
commemorating three quarters of a  
century of progress and achievement

1879 Neisser discovers the gonococcus  
Max Nitze introduces cystoscopy  
Billings and Fletcher start *Index Medicus*  
Parke, Davis & Company introduces  
chemical standardization of drug  
extracts



**PARKE, DAVIS  
& COMPANY**

PIONEERS IN RESEARCH  
ON MEDICINAL PRODUCTS

# Medical News

## County News

### Albany County

Dr Haven Emerson, of New York City, spoke on voluntary and compulsory health insurance on March 13 in Page Hall, Albany, under the auspices of the woman's auxiliary of the county society.

Medical societies and their auxiliaries from all parts of the Albany area were represented, including the county organizations in Schenectady, Schoharie, Rensselaer, Greene, Columbia, Saratoga, and Montgomery.

### Broome County

Dr Louis C Kress addressed the county society on March 11 on "Cancer Its Prevention and Treatment."

The radio speakers on Thursday evenings in March were Miss Beatrice Ritter, who spoke on nursing, and Drs Carl Benson, Ralph Vincent, and W H Boldt.

### Chautauqua County

The Jamestown Labor Legislative Conference voted on March 3 to submit a proposed medical service plan to the Jamestown Medical Society.

### Erie County

Buffalo's pneumonia death rate has been better than divided in half in the last three years, due largely to use of chemotherapy, Dr Nelson W Stroh, president of the county society, said in a newspaper interview a few days ago.

He attributed the "wonderful results" in Buffalo's conquest of pneumonia to a great extent to the help many physicians received from the clinical and laboratory demonstrations of the use of serums and chemotherapy conducted here in 1939 by the county medical society in cooperation with the Edward J Meyer Memorial Hospital, State Health Department, and Medical Society of the State of New York.

The Women Physicians' League, the Councilors, and Dentists held a joint dinner meeting on March 3.

Dr Edward Clark, of Buffalo, who died on March 1, had practiced medicine for sixty years.

### Nassau County

The Wagner state compulsory health insurance bill was opposed by the county society at its meeting in the Cathedral house, Garden City, on February 25, as reported in the *Nassau Review Star*.

As a more effective plan, the society endorsed that of the Medical Expense Fund of New York, Inc., a nonprofit, medical expense indemnity insurance company authorized by the state legislature. The fund operates in similar fashion to the "three-cents-a-day" hospital plan.

The society contended that the compulsory measure would make it impossible to provide the medical care to which "persons in moderate

circumstances are entitled." Under the compulsory measure, all persons who earn up to \$25 weekly would have to purchase the insurance and would have to accept any physician sent to care for them, the society charged.

The plan of the medical expense fund, as outlined before the society by Dr Frederick E Elliott, of Brooklyn, head of the organization, would permit the subscriber to select his own physician from a list of co-operating doctors in the county.

Already more than 150 physicians in Nassau County have announced they would cooperate in the medical expense fund plan, J Louis Neff, executive secretary of the society, said.

Subscribers would be entitled to \$500 worth of medical care, including surgery, x-ray and other special services a year, Dr Elliott said.

More than 175 members of the society attended the session and saw a ten-minute motion picture. The members also heard a report of the legislative committee headed by Dr Eugene Coon, of Hempstead, and a report of the medical economics committee headed by Dr Stuart T Porter, of Floral Park.

### New York County

The county society has condemned the bill in the State Legislature which proposes to amend the education law regarding the practice of chiropractic. It characterized the bill as a "menace" to the health of the people of this state, emphasizing that the training of chiropractors was "inadequate" to permit them to take care of the sick.

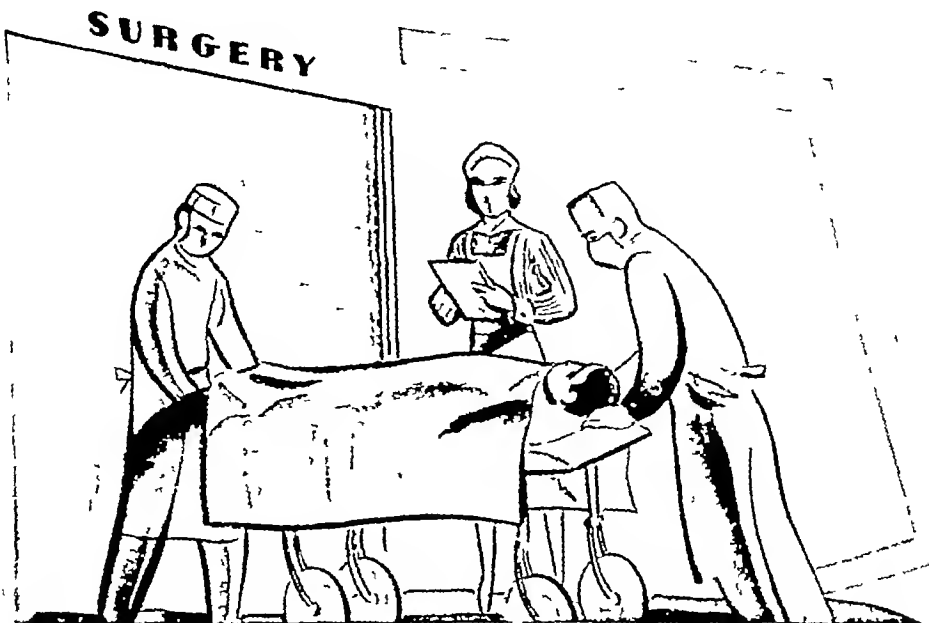
The Academy of Medicine met on March 6, with the following program:

"Current Concepts Regarding Benign Lesions of the Small Intestine" (a) Roentgenological aspects—Ross Golden, professor of radiology, College of Physicians and Surgeons, Columbia University, (b) Surgical aspects—Claude F Dixon, associate professor of surgery, Mayo Foundation, University of Minnesota, (c) Medical aspects—Burnell B Crohn, associate in medicine, Mount Sinai Hospital.

On March 11 there was a combined meeting of the Section of Neurology and Psychiatry of the New York Neurological Society. Papers of the evening were (a) "The Effect of Liver Therapy on the Pathways of the Spinal Cord in Subacute Combined Degeneration"—Charles Davidson, discussion—Lewis D Stevenson, (b) "The Psychopathology of Psychopathic Personality"—George S Sprague, discussion—Karl M Bowman and A A Brill, (c) "Ambulatory Schizophrenias"—Gregory Zilboorg, discussion—A A Brill. A general discussion followed.

The International Medical Club of New York met in cooperation with the French Medical Society, the Hispano-American Medical Society, the Hungarian-American Medical Association, the Italian Medical Society, the Rudolph Vir-

[Continued on page 778]



## *Preoperatively... and for Speedier Post-Surgical Come-Back*

In the aim for a better nutritional state in the patient about to undergo surgery, New Improved Ovaltine can play a signal role. It contributes materially to the protein, carbohydrate, mineral, and vitamin intake, providing the elements which have been shown to reduce the hazards of anesthesia and surgery.

Postoperatively, Ovaltine supplies balanced caloric energy in easily digested, readily available form. Its palatable taste assures acceptance by the patient even when many other foods are refused, and its generous supply of vitamins and minerals makes for accelerated postsurgical comeback. Following abdominal surgery Ovaltine is especially valuable, its low curd tension encourages rapid gastric emptying, its complete digestibility and virtual freedom from fibrous resi-

due impose no undue burden upon the stomach and small bowel. Ovaltine is advantageously included in the postoperative diet as soon as liquids are tolerated.

The recommended three daily servings of New Improved Ovaltine, made according to directions, each with 8 oz. of milk\*, provide in addition to proteins, fat, and carbohydrate, the following:

VITAMIN A	2578 I. U.
VITAMIN B <sub>1</sub>	302 I. U.
VITAMIN D	327 I. U.
VITAMIN C	491 Sherman-Bourgeois units
CALCIUM	1.05 Gm.
PROTEIN	0.903 Gm.
IRON	8.8 mg.
COPPER	0.75 mg.
(*Based on average reported values for milk)	



NEW IMPROVED

# *Ovaltine*

2 KINDS—PLAIN AND CHOCOLATE FLAVORED

Ovaltine now comes in 2 forms—plain, and sweet chocolate flavored. Serving for serving, they are virtually identical in nutritional value.

Physicians are invited to send for individual servings of New Improved Ovaltine. The Wander Company, 360 North Michigan Avenue, Chicago, Ill.

Say you saw it in the NEW YORK STATE JOURNAL OF MEDICINE

[Continued from page 776]

chow Medical Society, and the Russian Medical Society, at the New York Polyclinic Medical School and Hospital, on March 5. The topic and speaker were "Contributions of Foreign Graduates to American Medicine," by Dr Foster Kennedy, professor of neurology, Cornell University Medical School, with remarks by Dr Alfred M. Hellman, president, Medical Society of the County of New York.

The club will meet on April 21, at The New York Academy of Medicine, Host—The Rudolph Virchow Medical Society, and on May 16, at New Amsterdam Hospital, Host—The French Medical Society.

Dr Claude A. Burrett, president of the New York Medical College and Flower-Fifth Avenue Hospitals, died at the hospital on March 3 of a cerebral hemorrhage. He was 62.

### Onondaga County

Dr Leon H. Cornwall, of New York City, addressed the county society on "Medical Science and Political Philosophy" in the Syracuse University College of Medicine on March 4.

Dr Edward S. Van Duyn, chairman of the Onondaga County Medical Preparedness Committee, discloses, as reported in Syracuse newspapers, that questioning of men rejected at the Syracuse draft induction station has revealed that 90 per cent of them refused to permit examining physicians to refer disabilities to health welfare organizations for rehabilitation.

"This is probably explained by the fear on the part of the man examined that it is purely an effort to make him fit to be drafted when he has just escaped," Dr Van Duyn said in an article in the monthly publication of the Onondaga Medical Society and the Syracuse Academy of Medicine.

Physicians on duty at the induction station decided to report remediable physical defects to welfare health authorities, but selective service headquarters reported that such information was confidential and could not be passed on by draft boards.

"In an effort to get some idea of how this (reference system) would work if carried out, some of the draft physicians were requested to ask men rejected if they would like to be referred for such rehabilitation," Dr Van Duyn explained.

The number of men questioned was small, but it was "surprising to learn" that more than 90 per cent refused, he said.

Continuing, the article pointed out that one reason for the occasional appearance at the induction station of a registrant wearing braces is that such a man's examination by doctors attached to his draft board is not required to be as thorough as the examination at the station.

### Rensselaer County

Members of the county society were invited to attend the public meeting of the American Institute of Electrical Engineers in Union College Memorial Chapel at Schenectady on March 13. This was the fifteenth memorial of a series inaugurated in 1925 by the Schenectady section of the institute to perpetuate the memory of Dr Charles P. Steinmetz.

The lecturer was Dr Frank H. Lahey, head of the Lahey Clinic in Boston.

Dr James P. Marsh, of Troy, who died on February 23 at the age of 78, had practiced medicine and surgery from 1885 to 1923. He was one of the founders of the Samaritan Hospital in Troy.

### Richmond County

The county society held its monthly meeting on February 19, after being postponed from February 12, 1941, because of the holiday.

During this meeting, the society duly elected Dr Edward Williamson Perkins and Dr Hubert D. Farrell new members of the society.

After the business meeting, the movie "Transverse Cervical Cesarean Section" was shown.

The following committees have been appointed: Coordinating Council—Drs H. A. Cochrane, H. Lynn Halbert, and G. W. McCormick; Economics Committee—Dr Charles Rieger, chairman, Drs C. Douglas Walsh, John K. Lucey, and Herman Friedel; Legislation Committee—Dr D. V. Datalano, chairman, Drs J. D'Agostino, A. S. Driscoll, and W. T. Heldmann; Nominating Committee—Dr F. Coonley, chairman, Drs L. Foote, C. D. Walsh, J. K. Lucey, and E. C. McCulloch; Workmen's Compensation Committee—Drs. Donald E. Law, John J. Goller, and Curtis J. Becker; Medical Advisory Committee for Home Relief—Dr C. E. Pearson; Associated Hospital Committee—Drs H. Lynn Halbert, H. A. Cochrane, and D. E. Law; Committee for Joint Meeting of Pharmacists and Physicians—Dr George Johnson; Medical Preparedness Committee—Dr A. S. Driscoll, chairman, Drs D. E. Law, C. Douglas Walsh, Herbert A. Cochrane, Enrico Soldini, Herman Friedel, and George W. McCormick.

### Washington County

A combined meeting of the county society and the staff of the Mary McClellan Hospital was held at the hospital on January 16. An address on "Acute Cranio-cerebral Trauma," covering the usual type of injuries to the skull, brain, and adjacent tissues, with details of diagnosis and treatment, was given by Dr Francis A. Echlin, New York City, assistant visiting neurosurgeon of Bellevue Hospital.

A presentation of clinical cases was made by Dr L. Whittington Gorham, of Albany, and an explanation of the new welfare department regulations was given by Dr W. S. Bennett, medical supervisor.

### Westchester County

Dr Philip M. Stimson, of New York City, addressed the county society on March 18 on "Acute Contagious Diseases of Childhood."

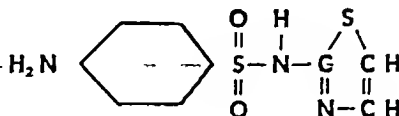
The county society will hold an informal stag dinner at a New York hotel in the late spring this year instead of the usual dinner following a golf tournament at one of the local country clubs. The date tentatively selected is May 24. There will be present a nationally known guest speaker. A committee of arrangements is being organized under the chairmanship of Dr Henry J. Vier, of White Plains.

[Continued on page 780]

# SULFATHIAZOLE



*Markedly  
Effective*  
in treating  
**GONOCOCCAL  
INFECTIONS**



Published clinical experience with Sulfathiazole in treating gonococcal infections reveals that

1. The drug is useful in both sexes
2. The effective dose is relatively small
3. The discharge rapidly disappears
4. Treatment is comparatively short
5. Hospitalization is generally unnecessary
6. Toxic symptoms are generally mild
7. There is a high percentage of cures

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## SULFATHIAZOLE SQUIBB

Sulfathiazole Squibb is supplied in scored tablets of 0.5 Gm., in bottles of 50, 100 and 1000

**Caution** In common with other sulfonamides, Sulfathiazole should be administered with due recognition of its side effects and contraindications. Information available to physicians on request

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OUR EXHIBIT  
00TH  
32  
ITALY MEETING

**E-R-SQUIBB & SONS · 745 FIFTH AVENUE · NEW YORK**

[Continued from page 778]

The New Rochelle Medical Society held a regular meeting on February 10, at the Wykagyl Country Club. After dinner Dr Harry E Ungerleider, of New York City, presented a paper on "Cardiac Arrhythmia."

The Yonkers Academy of Medicine held a regu-

lar meeting on February 19, at the Hudson River Country Club. The guest speaker was Dr Ernst Boas, attending physician at Mount Sinai Hospital, whose subject was "Some Factors in the Production of Cardiac Infarction." Discussion was opened by Drs William J Vogeler and Herbert W Schmitz, of Yonkers.

## "Teaching Days"—Maternal Welfare

The Maternal Welfare Committee of the Medical Society of the State of New York announces Regional Maternal Welfare Teaching Days to be held in Syracuse on Thursday, April 3, and in Rochester on Wednesday, April 9.

The program at the *Syracuse Meeting* is as follows

1 00 P M Syracuse University College of Medicine, 766 Irving Avenue. Edward C Hughes, M D, Regional Chairman, Announcements, Glenn A Wood, M D, Remarks, Herman G Weiskotten, M D, Dean of the Syracuse University College of Medicine, Henry W Schoeneck, M D, Chairman of the meeting. The scientific program

"Demonstration of a Maternal Welfare Conference Procedure," Charles A Gordon, M D, Brooklyn

"Management of Occiput Posterior Positions," Merten C Hatch, M D, Syracuse

"Bleeding in the First Trimester of Pregnancy," J Thornton Wallace, M D, Brooklyn

"Management of the Early Toxemias and the Mild Late Toxemias of Pregnancy," Stuart B Blakely, M D, Binghamton

"Degenerative Changes of the Ovum in Early Pregnancy," Elliot Bishop, M D, Brooklyn. Demonstrations and Exhibits, Faculty Room, The College of Medicine

7 00 P M Dinner Meeting, Roof Garden, Hotel Onondaga, Syracuse

Speaker William E Studdiford, M D, New York City, Professor of Obstetrics and Gynecology, New York University College of Medicine

Subject "Chemotherapy of Postpartum and Postabortal Hemolytic Streptococcal Infections"

Demonstration of Color Movies in Teaching Obstetrics, Edward C Hughes, M D, Syracuse, New York.

The price of the dinner is \$2.00. No other fees will be charged. Dress—informal. For further information and reservations, address

Committee on Public Health and Education  
428 Greenwood Place  
Syracuse, New York

The program at the *Rochester Meeting* is as follows

3 00 P M University of Rochester Medical School, 260 Crittenden Boulevard, Ward L Ekas, M D, Regional Chairman.

"Blood Plasma, Transfusions, Etc"—Earle B Mahoney, M D, Rochester

"Analgesia"—James K Quigley, M D, Rochester

"Manikin, Treatment of Posterior Positions"—R N Ritchie, M D, Rochester

"Episiotomy"—Shirley Snow, Jr, M D, Rochester

"Emergencies of the Third Stage of Labor"—Karl M Wilson, M D, Rochester

"Breech Delivery"—J B Loder, M D, Rochester

Demonstration Case Study

8 45 P M Rochester Academy of Medicine, 1441 East Avenue, Rochester

"Normal Labor, Sepsis, Intercurrent Diseases"—Ferdinand J Schoeneck, M D, Syracuse, Associate Professor of Clinical Obstetrics, Syracuse University College of Medicine

A subscription dinner (\$1.25) will be held at the University Club, 26 Broadway, at 6 30 P M. Dress—informal. Dinner reservations must be made by April 7 to

Medical Society of the County of Monroe  
1441 East Avenue  
Rochester, New York  
Tel. Stone 860

THE MATERNAL WELFARE COMMITTEE OF THE  
MEDICAL SOCIETY OF THE STATE OF NEW YORK

Charles A. Gordon, M D, Chairman,  
Brooklyn, James K Quigley, M D,  
Rochester, Ferdinand J Schoeneck,  
M D, Syracuse



# Smoothage

*"An agent which supplies bulk within the bowel (bulk which is smooth, gently stimulating, non-irritating), an agent which re-educates the bowel to normal function and breaks the cycle of catharsis"*

**YOU**, the physician, know the real value of Smoothage. You know that the mucosal lining of the intestinal tract is a delicate membrane—that stimulation of bowel activity must be gentle, based on the presence of smooth, bland bulk.

You can doubtless affirm, from first-hand experience, the folly of combating constipation with harsh cathartics and irritating roughage materials which so frequently aggravate the existing condition.

Proceeding from these facts, Searle Research has evolved an agent which actually supplies the bulk necessary to overcome sluggishness in the bowel—yet provides it in a form that is gentle, bland and sooth-

ing to the irritated mucosa. The product—

## METAMUCIL-2

Widely acclaimed in the management of constipation, Metamucil-2 mixes instantly with fluids, and is unusually pleasant to take. May we send you a sample for clinical trial?



*G. D. Searle & Co.*

*Ethical Pharmaceuticals Since 1888*

CHICAGO

New York

Kansas City

San Francisco

[Continued from page 782]

York Orthopaedic Dispensary and Hospital Rights to two beds in the New York Eye and Ear Infirmary and one bed each in the Presbyterian Hospital and the New York Orthopaedic Dispensary and Hospital pass to St Bartholomew's Church

"The story of the Saratoga hospital beds" is told in *The Saratogian*. "A week ago," it relates, "*The Saratogian* printed a little notice that the hospital needed twenty modern beds, which would cost \$38 apiece. It suggested, since the hospital lacked the funds, that readers of the paper might find it possible to help

"Within a period of exactly seven days, individuals and organizations pledged all the money needed not only for the 20 beds but for two more than had been requested. Just for good measure these generous donors also gave \$46 additional, which will be used for children's cribs at the hospital. We all may be proud of this signal exhibition of civic spirit and liberality. We may be glad, too, that we live in the kind of a community, where, without tumult or shouting, such an incident can occur."

The London hospitals have now received much damage from air raids, but their work has gone on, says a London letter to the *J.A.M.A.* In a recent raid seven hospitals were damaged. These included a large general hospital and a hospital for women. Six wards of one hospital were wrecked when four bombs struck the building, causing the death from shock of some elderly patients. At another hospital two blocks were completely wrecked and four porters were buried in the ruins. One was quickly rescued, but the others were still trapped at the time of the report. Many hospitals have had their roofs ripped off, their windows shattered, and their walls reduced to a pile of rubble. One hospital endured four direct hits on four successive nights. But despite the worst the raiders can do, the hospitals carry on. Thus, at a well-known hospital the medical superintendent, the medical staff, the matron, and the nurses all showed unflinching bravery through a grueling seven-hour ordeal. Their calm comment when the "all clear" signal was given was "Well, we didn't lose a single patient."

## Improvements

Architectural studies for the new cancer hospital and clinic to be constructed by New York City at 163rd Street and Fort Washington Avenue and to be known as the Nightingale Hospital are nearly complete, Mayor La Guardia announces. The building will be ready for public service under the direction of the Hospital Department late in 1942 or early in 1943, the Mayor said, and will cost about \$2,650,000.

The new institution will have 315 beds, and about 20 per cent of the structure will be devoted to laboratory space where original research will be conducted, in addition to the normal laboratory work of a modern hospital. There will also be an outpatient department.

A new building has been completed by The New York Hospital, Westchester Division, to care for 20 disturbed women patients. It is dedicated to the memory of Dr Charles H. Nichols, former superintendent, and is called the Nichols Memorial Cottage. The funds were given in part by his widow.

The 69-year-old West Side Hospital and Dispensary, in New York City, has been completely renovated at a cost of \$30,000, and was reopened on March 1.

Mount St Mary's Hospital at Niagara Falls has two new eight-bed children's wards.

A committee is looking into the possibilities of establishing a hospital in Sidney.

The Hepburn Hospital at Ogdensburg is to have a new operating room. Last year more than 1,500 operations were performed in the present operating theatre.

Enlargement of the Van Dugee Hospital at Gouverneur is planned.

A new four-story nurses' residence is in prospect for the Mercy Hospital at Watertown.

The Stevens Hospital at Granville has purchased the Sheldon estate and will enlarge the house to provide twenty-five additional beds for patients.

The new \$400,000 nurses' home at the Nippon Beach Hospital has been completed and will be occupied this month.

Fox Memorial Hospital, Oneonta, has let contracts for alterations to increase its capacity to one hundred beds.

The Syracuse General Hospital has launched a drive for a notable enlargement. The campaign will raise funds to build two new wings to the present building, providing an additional sixty-five beds. It will provide a four-story nurses' home large enough for housing and teaching 74 student and graduate nurses.

Herkimer Memorial Hospital plans an extension to add twenty-three beds, nearly doubling its present capacity.

A movement has been launched at Saratoga

[Continued on page 786]

# Chemotherapy of COMMON TYPES OF STREPTOCOCCUS INFECTION

• The remarkable achievements of antibacterial chemotherapy may be credited largely to the general practitioners of medicine, for by them are treated effectively most of the infections that are initially mild but potentially dangerous. These include septic sore throat, otitis media, sinusitis, postpartum infections, complications of trauma, erysipelas and urinary infections.

The treatment of most streptococcus infections in their early stages is relatively simple and assured, for satisfactory therapeutic response may usually be expected from properly graded doses of the sulfonamide compounds.

## *Well tolerated—by mouth and by injection*

It has been repeatedly reported by American clinicians of wide experience that Neoprontosil is definitely less toxic than sulfanilamide. An additional practical advantage is that Neoprontosil may be administered not only orally but also parenterally in comparatively high concentrations.

Physicians are requested to write for a pamphlet presenting detailed discussions regarding the pharmacology, indications and side effects.

**5 GRAIN  
TABLETS for  
ORAL USE**

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AMPULES and  
BOTTLES for  
INJECTION**

## NEOPRONTOSIL

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Disodium 4-sulfamide-phenyl-2-azo-7-acetyl-  
amine-1-hydroxynaphthalene 3,6-disulfonate



### WINTHROP CHEMICAL COMPANY, INC.

Pharmaceuticals of merit for the physician NEW YORK, N. Y. • WINDSOR, ONT.

[Continued from page 784]

Springs to secure the location of a \$4,000,000 United States Veterans hospital there

Leonard Hospital, Troy, is to have a new \$65,000 wing

The Rosenbaum property in Roslyn is being improved and enlarged at a cost of \$300,000 for use as a medical center to accommodate 100 patients

The Queens County Legion Auxiliary Juniors have presented an oxygen tent to the children's ward of Queens General Hospital

## VITAMIN C DEFICIENCY IN FAILURE OF WOUNDS TO HEAL

Vitamin C deficiency may be a factor in the failure of some human wounds to heal, Drs Charles C Lund and John H Crandon, Boston, declare in the *Journal of the American Medical Association* for February 22 as a result of investigations in which one of them went on a scurvy-producing diet and subjected himself to experimental wounds

To carry out experiments on the development of human scurvy, which results from a deficiency of vitamin C in the normal person, one of the authors went on a scurvy-producing diet from October 19, 1939, until May 7, 1940

Three months after the diet was started an experimental wound was made on one side of the back of one of the authors. No difficulty in wound healing could be demonstrated in this experiment, they declare. Shortly after five months the first sign of scurvy developed, and, although there was slight lassitude and ease of fatigue in the fourth and fifth months, marked fatigability began only in the sixth month

At exactly six months a second incision was made in the corresponding position on the other side of the back. Considerable difficulty was encountered in suturing this experimental wound, a condition that had not been encountered in the first wound. However, it was finally sutured and seemed to heal

"The cutaneous (skin) sutures were removed on the sixth day and adhesive strips applied to protect the skin from tension," the authors say. "On the tenth day the wound was reopened, and as soon as the skin was divided it was found that the tissues under the skin had not healed at all and that the wound contained a firm dry blood clot."

The clot was scooped out, and the wound was then sutured and the physician given vitamin C by means of injection into the vein. This was repeated daily for the next ten days, and the wound healed promptly at this time. At the end of the second ten days another incision was made across the area of the healed wound that had been pulled apart during the previous operation. This revealed normal healing.

The two men declare that "at just what point between three and six months delayed healing begins we cannot say."

As a result of their observations the two men say that a careful study of the vitamin C status of all surgical patients is valuable

## "COLD" PREPARATIONS TO BE ATTACKED

"On February 3, W G Campbell, commissioner of Food and Drugs of the Food and Drug Administration, notified all manufacturers of 'cold' preparations that henceforth this class of products will be included in the administration's program of operations," the *Journal of the American Medical Association* for February 22 says.

"The announcement pointed out that present-day medical opinion supports the view that there is no known substance or mixture of substances which can be relied on to prevent or cure colds, further, that surveys of products which now appear on the market show that many of them make claims that involve the treatment or prevention of colds which are not justified by the scientific facts, while others exaggerate the effects which the medications will have on the symptoms, and finally, now that section 201 (n) of the Food, Drug and Cosmetic Act is fully effective, in the opinion of the administration any reference to colds in the labeling of a drug should clearly indicate just what the effects of the medicine with respect to this disease condition will be and, if necessary to avoid misunderstanding, just what the limitations of the medication are. The commissioner bases this on the fact that section 201 (n) requires that the label reveal any facts that are material in the light of such affirmative representations as the label may make."

"By way of explanation, the notice includes a statement to the effect that, for various reasons, one of which has been lack of adequate facilities, the Food and Drug Administration has not in the past given attention to the large number of preparations sold for the treatment or prevention of colds or for the mitigation of the symptoms of this disease, but that henceforth this class of products will be included in the administration's program of operations. Recently the *Journal* called attention to the promotion of one line of these preparations in which it was suggested that the druggist prescribe such items for the treatment of the active cold. This illustrated the extent to which manufacturers of these preparations have gone in promoting them to the public. Now that the Food and Drug Administration has determined to review the claims made it will be exceedingly interesting to watch the changes which will take place in the claims which are made for many of these preparations."

More than three million men, women and children have died of tuberculosis in the United States during the last thirty years. Over two

million more, remarks the *Kentucky Health Bulletin*, would have died if the mortality rate of thirty years ago had continued to prevail.



# COMPARE...

COCOMALT with other food drinks *It is not a mechanical mixture* All ingredients are *malted together* just the vitamins being added under controlled conditions Precision manufacture plus uniformity is assured through regular biological tests Clinical work, also, is continuous

Three servings of COCOMALT per day — made with milk according to directions—give you —

Vitamin A . . . . .	4200 I. U.
Vitamin B <sub>1</sub> . . . . .	360 I. U.
Vitamin D . . . . .	402 I. U.
Vitamin G . . . . .	488 S.-B. U.
Calcium . . . . .	1170 mgs.
Phosphorus . . . . .	1140 mgs.
Iron . . . . .	15 mgs.

COCOMALT is used by many leading physicians for undernourished children, pre- and post-operative cases, anorexia of dietary origin, anemias, pregnancy and lactation and numerous other conditions where special dietary needs are indicated.

For normal and therapeutic diets for young and old

COCOMALT is an energizing protective food of vitamin-mineral character Readily digestible easily assimilated delicious

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**Cocomalt** — THE MALTED FOOD DIETONIC FOR ALL AGES

# Medicolegal

LORENZ J. BROSNAN, Esq.

Counsel, Medical Society of the State of New York

## Physicians and Surgeons—Evidence of Malpractice

THE highest court of one of the western states a few months ago handed down a decision of interest which concerns the burden of proof required of a plaintiff to establish a malpractice action against a physician \*

The case was one that was tried before the court and a jury, and at the close of all the testimony, although the sufficiency of the evidence was challenged by the defendant physician the case was submitted to the jury and a verdict was rendered in favor of the plaintiffs.

The proof that forms the basis of the jury's findings, interpreted in the light favorable to the plaintiff, was substantially as follows:

The principal plaintiff, Mrs. C, became afflicted with infantile paralysis and was affected so that she practically lost the use of her body above the hips. For about four weeks she received hospital care and then went home under the care of a Dr. M. He continued to have charge of her treatment for approximately a year and a half, and then she changed doctors and retained the services of Dr. W, the defendant in the case.

It seems that Dr. M was a specialist in orthopedic surgery and that his treatment consisted of the application of heat and massage and later on of exercise of a limited sort. By the end of a year and a half the function of the hands and forearms had improved considerably, but those muscles that raise the arms showed practically no improvement. In order to utilize the hands, the patient found it necessary to rest her elbows on something or be assisted by another person. She became dissatisfied with the care Dr. M had rendered, apparently because the exercises he advised were tiring.

At that stage of things Dr. W was called in. He also was an orthopedic surgeon of many years' experience. When he agreed to treat the patient, he told her he would only take the case on condition that she would follow his instructions.

Being of the opinion that Mrs. C had been allowed too much use of her muscles, he advised the application of a cast to afford complete rest of the muscles so that their strength could be built up. He placed her in a cast covering her body from her neck to her hips, and her arms down to and including part of her hands. This cast was applied on July 7 and was removed about four months later on November 11.

During the intervening period Dr. W saw the patient a couple of times within the first few days after the cast was applied and then did not actually visit her again until the same day the cast was removed. The cast during that time caused the patient no particular trouble until November 10, and on that day the patient's

husband told Dr. W that the cast had become painful to Mrs. C. However, it seems that about the middle of September the doctor and Mr. C had a discussion about obtaining a brace to be applied at the same time that the cast was to be removed in order to support the arms. There was some difficulty between the husband and the bracer, and no brace was made available before the time the cast was actually removed.

When the cast was removed, the patient's fingers and wrists were practically rigid, although there seemed to be a slight improvement in some of the shoulder muscles. She was unable to do the things she had before the cast was applied. Dr. C advised physical therapy to restore flexibility to the wrists and fingers, and such treatments were administered by a Miss B, a physical therapist, for about four months. Next, under an anesthetic an attempt was made to break down and manipulate the wrists and fingers. More physical therapy followed. At the time of the trial, about a year after the cast came off, heat and massage treatment was still being undergone. However, there was little flexibility to the wrists and fingers.

The plaintiff, Mrs. C, and her husband, the co-plaintiff, failed upon the trial to put in any medical testimony. The only physicians who testified were the defendant and an expert called by him. Both testified that there had been no departure from proper practice and that the cast was on a proper period of time and caused no injury by being left on for so many weeks. They testified that stiffness was to be expected in immobilized joints but that it would not be increased in degree after eight weeks—the period they stated to be essential to derive benefit from the use of a cast.

The plaintiffs contended that although the original application of the cast was proper it was allowed to remain on the patient beyond eight weeks and, hence, too long and that defendant was negligent in not personally seeing the patient from July to November—with resulting injuries to plaintiff.

As previously stated, with the proof as summarized, the jury brought in a verdict for the plaintiffs. The Appellate Court, on the other hand, ordered the judgment reversed and the action dismissed on the grounds the plaintiffs had failed to establish their cause of action.

In so ruling, the Appellate Court said in the opinion:

"All that appears herein, briefly stated, is that at the time the cast was placed on her, respondent had certain use of her wrists and fingers, but very little use of her upper arms and shoulders, that respondent was properly treated by appellant, in an endeavor to restore some part of the normal use of the muscles of the upper arms and shoulders, and that a bad result followed

(Continued on page 790)

\* Crouch vs. Wyckoff 107 Pac. (2nd) 339

# TO HELP EDUCATE THE AMERICAN PUBLIC *about* THE IMPORTANCE OF POSTURE TO HEALTH

*S. H. Camp & Company  
announces 3rd Annual*



In announcing 1941 National Posture Week we do so with a genuine expression of appreciation to the medical profession, public health groups, schools, and colleges throughout the country whose support of this activity has helped to make it an educational event of importance. We are happy in the knowledge that with each succeeding year, National Posture Week has resulted in more women being made conscious of the relationship of posture to health, as well as the importance of seeking professional advice regarding the ills caused by poor posture.

This year, as in the past, National Posture Week will be given widespread publicity through magazines, newspapers, and radio. In addition, non-commercial literature will be distributed to schools and colleges as an extension of our Public Health Educational Activities.

Many of our dealers throughout the country will also cooperate to help awaken the consciousness of the masses to the importance of correct posture. As always, we will endeavor to adhere to the ethical practices which will merit your approval.

**CAMP** *Supports*  
TRADE MARK

*S. H. Camp & Company, Jackson, Michigan*

[Continued from page 788]

A doctor is not to be charged with negligence because the result is not what is desired.

"In the instant case, we are of the opinion that negligence cannot be based merely upon the fact that, after the cast was removed there was stiffness in respondent's wrist and fingers. The medical testimony is all to the effect that stiffness is to be expected in a variable degree, and the testimony is that the condition of respondent's fingers and wrists after the removal of the cast was not unusual, except that they did not seem to respond to treatment as quickly as in some cases. Conceding that an unfortunate result followed the use of this cast, insofar as respondent's fingers and wrists are concerned, a doctor is not a guarantor, and the mere fact that a bad result may follow an operation is not of itself evidence of negligence."

The Court also said

"there is no evidence here which tends to establish that appellant was negligent in leaving the cast on for the period he did, nor is there any testimony which tends to show that had appellant made an investigation at the end of the six or eight weeks' period, he would have found a condition to exist different from the condition shown to exist at the time the cast was removed. This being true, how can it be said that it is not negligence for a doctor to leave a cast on for eight weeks, but it is negligence to leave it on nine, ten, twelve or sixteen weeks, where it is not shown that any different condition would or did exist at the end of the sixteen weeks than was there at the end of eight weeks?"

"We are clearly of the opinion that the questions of whether or not the leaving of this cast on for the additional period of two months caused the injury complained of, or whether or not it is reasonable to infer that it did, are questions which can properly be determined only by medical experts, and are not questions which may be determined by circumstances such as appear in this case, and upon which respondent relies to prove negligence."

### Absences of Physician upon Delivery

A YOUNG woman who was a month and a half pregnant consulted a physician who had attended her in connection with a previous confinement two years before. He made arrangements to care for her during pregnancy and to deliver her and instructed her to return to his office regularly for check-up. This she did until she was in the last month of pregnancy. Up until that time her condition had been normal

throughout. When the doctor saw her last, he told her to communicate immediately with him when she began to feel pain. Some three weeks thereafter, the doctor received an evening call to go to a remote part of the city in consultation with another doctor, and he did not return to his home or office until 2 00 A.M. Upon his arrival there, he was told by his wife that two telephone calls had been received from the home of this patient—one at 10 45 P.M. requesting him to attend her immediately as she was in active labor and the second about a half hour later stating another doctor had been called and the baby born.

A malpractice action was instituted against the doctor in which the plaintiff claimed that the defendant failed to attend her at delivery and during pregnancy as a result of which the baby died and the plaintiff suffered severe injuries. However, plaintiff never diligently prosecuted the action and as a result, sometime later, a motion was granted dismissing the action.

### Treatment of Xanthelasma

A MARRIED woman, 37 years of age, was referred to a physician specializing in the care of diseases of the eye with a history of having suffered from xanthelasma for a number of years. It seems that the condition had been removed from her eyelids nine years before with an electric needle, six years before with a knife, and three years before with a scissors, but it had recurred following each of said procedures.

The doctor undertook to treat the condition by the use of applications of chromic acid, a slight reaction followed, but the xanthelasma improved considerably. The condition of the plaintiff was observed over a period of about six weeks. At the end of that time the condition treated had dried up completely, but a slight eversion of the left lower eyelid at the inner canthus had developed.

A malpractice action was later instituted against the doctor in which the claim was made that due to his negligent care of the case, she became unable to close her left eye because of a contracting scar in the lower lid with resulting squinting and irritation to that eye.

Upon the trial of the action before a Court and a jury, the plaintiff testified with respect to the treatment rendered by the defendant physician and claimed that it was followed by a reaction and injury. She, however, failed to introduce any expert testimony in support of her contentions that the defendant was negligent and failed to follow medical practices. At the conclusion of the testimony on behalf of the plaintiff, the complaint was dismissed.

### MEMORIAL LECTURE—ACADEMY

Dr C. A. Mills will deliver this memorial lecture on April 3, 1941, at 8 30 P.M. at the New York Academy of Medicine. Dr Mills is professor of experimental medicine at the University of Cincinnati.

### RAW MANNERS ARE NOT WELL DONE

"In no profession does culture count for so much as in medicine, and no man needs it more than the general practitioner."

—Quoted from  
Sir William Osler



*Q But, doctor, is it all right to leave the peas I  
don't eat in an open can?*

*A. From the standpoint of health, there is no  
reason why peas, or any canned food, should  
be put into another container (1)*

(1) For some obscure reason many members of the general public persist in believing that an open can is not a safe food container. The U. S. Department of Agriculture expressed itself on this fallacy in a press release of February 23, 1936, as follows:

"Thousands of housewives are firm in the faith that canned foods ought to be emptied as soon as the can is opened, or at least before the remainder of the food goes into the refrigerator. Whether in the original can or in another container, the principal precautions for keeping food are—Keep it cool and keep it covered." *American Can Company, 230 Park Avenue, New York, N. Y.*



The Seal of Acceptance denotes that the statements in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association

# Woman's Auxiliary

To the Medical Society of the State of New York

## Legislation and the Auxiliary

One of our most important functions as an Auxiliary to the Medical Society is our work in legislation. In my correspondence with county chairmen and in my personal contacts with auxiliaries to which I have spoken, I have stressed the importance of each legislative committee acting as a study group in order that the members may become familiar with the salient points of state and federal legislation of interest to the medical profession. Thus, the committee can digest and explain these measures to its auxiliary in the time allotted for legislation at each meeting. In our daily contacts with lay persons we have many opportunities to promote a more intelligent understanding of these bills. Their true meaning and the reasons for their introduction are often misunderstood by the general public. Without an interested and active committee it is, of course, impossible to carry on this function.

There is definitely a growing interest in legislation among the various auxiliaries. The natural reaction to this particular subject seems to be that it is technical and uninteresting, and why bother about it anyway? It is most gratifying to note the interest which is manifest once the measures are explained to members and their part in the work is made clear to them. Space does not permit any discussion of the current state and federal legislation. Your county chairman has outlines and explanations of these bills with which you should be familiar. I am constantly stressing the importance of a complete understanding of the forms of Socialized Medicine by every auxiliary member. At your disposal is an explanatory outline which your county chairman has on this subject. Tantamount to this are the discussions we hear concerning the rejections for Selective Service, and here is where we can assist in a large measure by our knowledge of the real reasons for the rejections and what lies behind them. An editorial in the *J. A. M. A.* for January 4, 1941, gives an excellent explanation. If each of us will turn her attention to these various phases of legislation we will soon see how really interesting it can be. Furthermore she will not need to ask why it is important

for us to understand legislation, or why we, as an Auxiliary, should consider legislation one of our most important functions.

LOIS (Mrs. Albert) VANDER VEER, 2ND

## County News

**Onondaga** The regular meeting was held in the Syracuse Memorial Hospital, March 4, Mrs. Edgar M. Neptune, presiding. There are 212 members in this Auxiliary with 65 members in attendance. Dr. Robert Ainslie, resident pathologist of Syracuse Memorial Hospital, addressed the group on "His Experiences in China." His talk proved very interesting. Following this address a skit representing "A Model Meeting" was portrayed, Mrs. Winthrop Pennock, acting as chairman. This comedy was most entertaining and amusing. Over \$2,500 worth of medical equipment and medicine were collected by the Public Relations Committee for the Bundles for Britain, Mrs. Nobel Chambers ably acting as chairman for this excellent endeavor. A report was received that this donation was the largest of its kind from any community in the county.

**Oswego** A dinner meeting took place February 12 at the Pontiac Hotel—twenty-one members present. Mrs. A. Vander Veer, 2nd, talked on medical legislation. The auxiliary is collecting instruments and vitamins for Britain. At the business session Mrs. G. A. Marsden, of Oswego, and Mrs. F. E. Fox, of Fulton, were elected delegates to the state convention.

**Niagara** Mrs. W. Roger Scott presided at a luncheon meeting in February. Donations of vitamin capsules were received. Mrs. C. Rennie, of Erie County, gave an informative talk on auxiliary work. Dr. Ernest Reiger spoke on medical legislation at the March session. Red Cross sewing and knitting directed by Mrs. G. W. Arthurs followed.

**Rensselaer** The executive board was entertained by Mrs. J. J. Rainey, president. The board voted to participate in the Troy Community Chest Drive. The March meeting was in cooperation with adjacent auxiliaries at the lecture by Dr. Haven Emerson.

## ARMY COMMISSIONS FOR DOCTORS

The War Department has approved a plan whereby the Army will start utilizing the roster being prepared by the American Medical Association of civilian physicians who have agreed to accept commissions in the Army when needed for immediate active duty during a national emergency. The *Journal of the Association* for February 22 reports in announcing the issuance by the Adjutant General of instructions pertaining to the plan.

The instructions, which have been sent to the Surgeon General and to each corps area and department commander of the Army, point out

that the roster being prepared and to be maintained by the Association will have the physicians classified as to professional specialties and proficiency.

Under the plan, which the Adjutant General says will be placed in operation at such time as the War Department will direct, when no qualified Reserve Officer can be found for medical corps vacancies, recommendations to the corps area commander concerned will be obtained from the American Medical Association as to those physicians on the Association's roster who meet the desired qualifications.

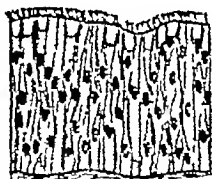
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Have some gum in your pocket or bag and in the office. Your patients—children and adults—appreciate your friendliness when you offer them some. Try this for a month—you'll be pleased with the results.

National Association of Chewing Gum Manufacturers, Staten Island, New York

V 24

### THE ADVANTAGE OF A DISADVANTAGE

WHAT the eye doesn't see the heart doesn't grieve over. "This is equally true of the ear," states Arthur Hedley in the *March Volta Review*, "for hearing nothing we remain unconcerned and undisturbed. My utter unconsciousness of the sound of enemy planes overhead saved me many a sleepless night in France."

This statement gives rise to the thought that the handicapped are not quite as bad off during air raids as to warrant the pity a normal being might feel for the deaf or the blind. The author of the quotation above discusses "sounds and shocks" endured by the hard of hearing in a blackout. Because the eyes which are such an asset in

daylight, are of little use in the dark, impairment of hearing does have its disadvantage for the deaf. Not hearing approaching footsteps, collisions are inevitable. Nor can they hear the sirens warning of approaching raiders.

So the hard of hearing stay indoors and avoid the risk those who can hear run when they go out to public places for entertainment. The normal persons generally run to the doors to look for the raiders thus exposing themselves to the risk of being hit by flying shrapnel. The hard of hearing folks stay indoors oblivious to it all and are in reality in less danger than others.

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# NEW YORK STATE JOURNAL OF MEDICINE

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## Editorial

### Care of the Sick

The work of Dr Wilson G Smillie<sup>1</sup> in his survey to secure the extensive cooperation of all those sufficiently concerned with medical matters to have *specific information* about them is an example of the newer and much more valuable kind of inquiry which we dare to hope will be extensively plagiarized in the future. Conspicuously lacking, apparently, in Monroe County is the dabbler complex so frequently observed among the welfare weevils, and the compulsion-diaeresis which seems to have liquefied the legislative cortex where medical matters are concerned. The monroviens believe with Montaigne in speaking the truth, not so much perhaps as they would, but as much as they dare, and they dare a little the more as they grow older, as Dr Smillie's survey witnesses.

The factual data gathered in this report in 1930, 1935, and 1940 show that the existing facilities for the care of the sick exhibited certain definite trends:

A Increase in hospitalization cost due to increased demands for hospital bed care

B Increased cost of hospitalization because of better and more extensive service

C Change in type of care as the result of an increasing demand for hospitalization of chronic disease

This is the result of the gradual

aging of the population in general. D A large increase in hospital insurance

These are the facts in Monroe County. "The physician," says the Monroe County Medical Society in judging the adequacy of existing facilities there, "is the keystone of medical care, *he is medical care*, and the hospital facilities are the tools with which he must do his work. Who, then, should know better than the physician whether or not his tools are adequate? Who is a better judge of the defects of the equipment with which he must accomplish his tasks?"

Probably even the public which enjoys the adequacy of the existing facilities can answer that. As part of the survey an analysis of public opinion conducted by an expert in this kind of survey showed that the *inadequacies* which the public believed to exist agreed closely with the opinion of the physicians. These were necessity for more low cost hospital beds for care of acute illness of private patients, better provision for psychiatric care in general hospitals and additional outpatient facilities in psychiatry, more beds for the chronically sick, especially for the arthritis and cardiac cases, and more facilities for the care of convalescents and also for mental and dental care.

In the survey this question was asked: "Has your family ever had any kind of difficulty in securing it when they needed medical, hospital or nursing care?"

<sup>1</sup> Smillie, Wilson G. A Survey of the Facilities for the Care of the Sick of Rochester, N. Y. conducted for the Community Chest, Inc. Jan., 1941

Ninety-two per cent replied they did not know of any family in Rochester that needed such care and was unable to get it. Thus do the monroviens strike a

powerful blow for truth and sanity in the matter of existing and needed facilities for the care of the sick. Albany papers please copy

## Medicine and Military Needs

"Out of the selective service program, in itself a necessary and commendable means of national defense, has arisen a situation which imperils the health of the American people and the preparedness program as well," says Mr. J. O. Kelley, executive secretary of the Medical Society of Milwaukee County.<sup>1</sup> "The present defense crisis threatens to precipitate a wholesale conscription of medical students and interns for military training. Medicine is genuinely alarmed lest the medical resources of the nation be depleted to such an extent that both civilian and military populations will suffer approximately 3,500 of the 5,200 physicians graduated each year will qualify physically and will be needed to enter the services of the Army, Navy, and Public Health Service for a year's training."

The *Journal of the American Medical Association* in a leading editorial says

"At present, probably more than ever previously, a need for clear thinking on the subject of the supply of interns in relation to the demand by hospitals for their services is desirable. Some hospitals have been unable to secure any interns and others have not secured their usual number. The demand exceeds the supply. The size of senior classes in approved medical schools has remained almost constant since 1934, while the number of appointments available each year in approved hospitals has steadily increased. Although statistics are not yet available, the number of graduates of European schools seeking internships in this country has diminished greatly within the past year. While the number of interns recruited from this source has never been large, the recent decrease has served to accentuate the disproportion between supply and demand."

"The approved medical schools with their present facilities cannot increase the size of their classes without sacrificing accepted educational standards. Furthermore, the function of medical schools is to educate physicians to supply the medical needs of the country, not merely to develop young physicians to meet the demand of hospitals for low cost house staff personnel."

Until approved medical schools are able to train more students (assuming that more applicants could qualify for admission) the supply of prospective interns will not increase.

"Even the present flow of graduates from approved schools into internships may be reduced by the selective service act. The crucial needs of the preparation for national defense, especially the necessity of expanding the Army and Navy Medical Corps, will no doubt reduce still further the number of graduates available for hospital service beyond the first year of intern training. This will affect hospitals which have internships more than one year in length as well as those which have extended training services in the form of residencies."<sup>2</sup>

The drainage of competent intern material is already beginning to affect seriously the staff organization of many of the smaller hospitals. In addition, the call to active service of many reserve officers presently serving in key positions on the medical and surgical staffs of many hospitals, small and large, presents another threat to the proper organization of the medical administration of civilian hospitals.

The attitude of the Selective Service Administration toward any change in the basic law was voiced before the State Military Affairs Committee recently by Brig. Gen. Lewis B. Hershey, deputy director. He spoke in opposition to an amendment offered by Senator Murray of Montana to provide for deferment of medical students, interns and resident physicians and surgeons in hospitals until they shall have completed their studies. He advised that it would be the wiser course to permit local boards to make a final decision. Senator Murray in reply is reported to have said that many students and interns were so uncertain over the outlook that they were volunteering.

Major William J. Walsh, executive assistant director of the Selective Service

<sup>1</sup> Milwaukee Medical Times, 14, No. 3 (March) 1941.

<sup>2</sup> J. A. M. 116, No. 11 (March 14) 1941.

for New York City, said at Columbia University, March 18, 1941, that the Selective Service Act stipulates that college and university students may request deferment until the end of the academic year, or July 1, 1941, whichever is first. Senior law and medical students may, he said, obtain further deferment enabling men to take state bar or medical examinations before their induction for a year's military training.

In the interest of health and defense medicine is calling upon local draft boards for a clear and just interpretation of the rules of the Selective Service Act relating to medical students. The re-

sponsibility is definitely assigned the local boards under Section XVIII, Vol. III, of Selective Service Regulations. It should be the business of organized medicine to see to it in every way possible that local draft boards are informed of the seriousness of the medical student problem, the status of the intern and resident in the local hospital structure, and the importance of their roles in preserving a reasonable balance in the medical institutions of their communities. If local boards are to exercise reasonable judgment, they must be in possession of the facts upon which to make their decisions.

### Attention, Parents!

Recently, the Municipal Civil Service Commission published a comprehensive study of the correlation of brains and brawn. In a group of 7,500 men those who rated lowest, physically, had virtually the same mental ability as those whose physical strength was rated "very superior." The study was based on the physical performance of four separate groups, of 100 men each, of the Department of Sanitation. These groups were so spaced that they covered the entire range of successful candidates. Group A contained the top men, Group B ranked near the 3,000 mark, Group C rated around 5,000, and Group D comprised the residuum at the bottom of the 7,500-man list.

Group	Physical Percentage	Mental Percentage
A	98	90
B	91	89
C	88	90
D	85	89

"It is altogether possible," the study says, "to have both brains and brawn. They are not mutually exclusive competency categories for brains are a-

likely to accompany a highly developed physique as weak and flabby muscles.' The tests not only required a written examination necessitating more than average intelligence to pass, but included as well the most rigorous test of physical strength.

Here is certainly factual evidence of a highly inconclusive nature from an unquestionably reliable source. It seems to indicate that if you have brains you can thumb your nose at the physical educators and let it go at that for your daily dozen. But it does not say that if you haven't brains you can't still be a Sandoz if you start early enough. On the other hand if you have brains you do not apparently interfere with their function if you fly a kite or jump over fences or run 120 yards with a fifty-pound dumbbell in each hand or dance the shp horn jive with a 150-pound dumbbell in one arm, or whatever.

The principal thing, as we see it, is to have the brains, granted those, you can be as flabby as an editorial writer or as physically powerful as a successful Department of Sanitation candidate and you will shine like a light, even "as a good deed in a naughty world."

## Buffalo Beckons

Gateway to Canada—hydroelectric power capital of the world—leader of diversified industry—city of homes and beautiful trees—threshold of Niagara Falls—flour milling king—aircraft manufacturing center—convention city of the future—that's Buffalo, scene of the 135th annual convention of the Medical Society of the State of New York, April 28 to May 1

More than 2,000 delegates from all sections of this great Empire State are expected to pour into the Queen City of the Lakes at convention time, when the glories of spring will begin to spread themselves over the Niagara Frontier in a glorious welcome

Buffalo promises you a never-to-be-forgotten visit Not too large, not too small, this city of good neighbors will give you more than mere convention sessions in a hotel It will provide entertainment, recreation, and sight-seeing possibilities unequalled in the East

The Queen City of the Lakes is getting herself all dressed up for the Medical Society conclave Of course, one of the big drawing cards in the Niagara Frontier is that wonder of the world which never seems to lose its appeal—Niagara Falls The roaring cataract still hammers out its mighty thunder on the jagged rocks hundreds of feet below as thousands of travelers from every corner of the globe look on in wonderment

Those historic spots around the Falls on which have trod the feet of royalty from many lands are more beautiful than ever Victoria Park—Goat Island—Honeymoon Lane—Cave of the Winds—the Rapids—all are within easy reach of convention delegates

But you delegates won't have to hike down to Niagara Falls for beauty and attractions Right in Buffalo, conventioners will find urban splendor at its peak From hotel windows high above the street, delegates will be able to see Lake Erie, where it pours its waters into the mouth of mighty Niagara, and Canada just across the river

Turning in another direction, one can see Downtown Buffalo in all its twentieth century progress Skyscrapers reach to the heavens and rings of smoke curl from their lofty stacks Down in the streets below, thousands of work-a-day folks go their respective ways

And yet, turning only a trifle from this bustling scene of activity, the convention delegate can look northward along Delaware Avenue into one of the finest residential sections in the

country, just a few blocks away from the heart of the business area

For those with an interest in industry and commerce, Buffalo's attractions are legion There are the giant flour mills, largest in the world, miles of great steel plants that pour molten metal day and night to help build Uncle Sam's defenses, and great, sprawling aircraft factories where "wings of death" are produced in an unending stream

Buffalo is the second largest railroad center in the country and great lines of laden cars move through the Niagara Frontier in a never-ending stream Lake freighters make their way in and out of Buffalo harbor almost without interruption

Buffalo's hotels, restaurants, smart shops, night clubs, theaters, and other places of entertainment are among the finest, and delegates are assured facilities for fun day and night

Now that you have this mental picture of the 1941 convention city, it might be well to furnish delegates with some idea of the importance of Buffalo as a medical center Far and wide this city is known for its many large and modern hospitals, spotted throughout the metropolitan area, serving thousands upon thousands of suffering humanity

To describe adequately the features and activities of these numerous institutions would fill many volumes But to furnish convention delegates with a thumb-nail sketch of these hospitals, some abbreviated data are here presented

One of the largest hospitals in this area is the Buffalo General, located at 100 High Street Delegates will find numerous attractions at this institution, including the blood bank, blood plasma bank, shock room, oxygen therapy department, windowless air-conditioned surgeries, new urologic department, x-ray department, library, lunch room, and the new tumor clinic

Buffalo General also is using the A & B factor with type O blood This is a new discovery by the hospital's chemist and bacteriologist in which physicians should be extremely interested It permits the hospital to use type O blood for transfusion of any patient with absolutely no reaction Dr Fraser D Mooney is superintendent of this institution

One of the finest municipal hospitals in the country is Buffalo's city hospital, known as the Edward J Meyer Memorial Hospital, 41

[See page 890 for rates]

Grider Street. It serves thousands of indigents in the Buffalo area. During the past year, Meyer Memorial Hospital treated 11,243 patients with a total of 316,987 patient days.

Its extensive diagnostic and treatment clinics, including branch dispensaries, had total visits of 145,596 during the past year. Its vast dental clinics recorded a total of 39,198 visits.

Operated as an adjunct to the city hospital is the Crippled Children's School, which is financed by the city and is located on the hospital grounds. Hundreds of Buffalo's crippled children receive their grade-school education here. Dr. Walter S. Goodale is superintendent of Edward J. Meyer Memorial Hospital.

Another important link in the chain of Buffalo hospitals is Emergency Hospital, 108 Pine Street, operated by the Sisters of Charity. This institution has a capacity of 170 beds. During 1940 it admitted 4,260 patients. First aid is an important service of this institution, and, because of its downtown location, it receives a large percentage of accident victims.

In 1940, Emergency Hospital rendered first aid to 7,644 patients. Visits to the outpatient department totaled 17,401. Two ambulances with attending medical service are operated day and night. This institution boasts the latest modern equipment and puts special emphasis on quick and efficient service for all medical and surgical emergencies.

Another large and important Buffalo hospital is Millard Fillmore, 875 Lafayette Avenue. Scrutiny of the annual report of this institution shows that 7,756 patients were admitted during the past year. Births totaled 1,866. Millard Fillmore has earned a wide reputation for its childbirth work.

Highest census of Millard Fillmore during 1940 was 302, with an average daily census of 265. A total of 4,921 operations was performed at the institution, and its ambulances made 1,017 calls. Laboratory examinations reached the impressive figure of 86,683. The active outpatient department reported a total of 16,721 visits. Harold A. Grimm is superintendent of Millard Fillmore Hospital.

Doing a splendid job on Buffalo's West Side is the Columbus Hospital, of which Dr. Charles R. Borzilleri, Sr., is president. Founded in 1908 by Dr. Borzilleri, it is a general voluntary hospital with a capacity of 150 beds. It has been approved by the American College of Surgeons.

On October 23, 1939, a new three-story wing was opened. This was the seventh major addition to the hospital. This wing contains enlarged outpatient quarters in the basement,

a surgical suite on the ground floor, and private rooms and semiprivate rooms on the second and third floors. During the past year 2,461 patients were hospitalized, and 12,087 visits were recorded in the outpatient department.

Another Buffalo hospital doing surgical, medical, and obstetric work is the Lafayette General Hospital, 113 Lafayette Avenue, of which Dr. D. C. O'Connor is president.

Lafayette General was incorporated in 1910. It has sixty-four adult beds and seventeen bassinets. It renders a distinct service to residents of the North Buffalo section.

One of the city's best known Catholic institutions is the Buffalo Hospital of the Sisters of Charity, 1855 Main Street. Founded by three Sisters of Charity in 1848, it was the first hospital in Buffalo, the first to institute an emergency hospital, and the first to organize a training school for nurses.

From time to time the capacity of the hospital has been increased. For the last forty years it has had a capacity of 200 beds. During the past year it admitted 4,960 patients. This institution boasts excellent facilities. X-ray equipment is new, operating rooms are equipped to meet the needs of every specialty in surgery, and the laboratory is under the direction of a well-known pathologist. Sister Hortense is superintendent.

In the heart of the Humboldt area in Buffalo is located the Deaconess Hospital, 563 Riley Street. Incorporated in 1896, it is a general hospital with a bed capacity of 190 for adults and children and thirty-five bassinets. During 1940, admissions totaled 6,417, operations, 4,163, deliveries, 1,045, autopsies, 117, laboratory examinations, 38,491, and x-ray examinations, 3,581.

The hospital employs six interns yearly on a rotating basis. It also has a one-year residency in surgery. The hospital also conducts a school of nursing, average membership of which is 150 students. Membership in the Erie County Medical Society is required for admission to the staff. Henry T. Brandt is managing director.

Serving the people of South Buffalo is one of the city's most modern hospital buildings, Mercy Hospital, 565 Abbott Road. Annual census figures, averaged over a period of years, are inpatients, 5,334, outpatients, 6,216, operations, 2,521, and births, 1,051.

Among attractions for convention delegates will be a clinic covering a selected list of non-malignant cases being treated by the deep therapy department. The medical department will present a survey of the treatment of

pneumonia for the last thirteen years, showing an average mortality of 39 per cent from 1928 to 1938, inclusive, and an average mortality rate of 9 per cent for 1939 and 1940

Mercy Hospital also will give a demonstration on the technic of the maternity department in its care of the newborn. The blood bank in operation also will be demonstrated. Taxi service to and from Mercy Hospital will be provided for convention delegates who wish to attend. Sister Mary Gerard is superintendent.

Of tremendous interest to delegates should be the State Institute for the Study of Malignant Diseases, 663 North Oak Street. Organized in 1898, the institute is the oldest laboratory and hospital for research in cancer in the country. It has a 100-bed capacity and is equipped with the most modern facilities for the irradiation treatment of cancer, together with a modern radiographic department and a large outpatient department.

The institute renders free pathologic diagnosis to any physician in New York State and a free diagnostic clinical service to assist family physicians and patients in arriving at a diagnosis of cancer. Dr. Burton T. Simpson is director.

The United States Marine Hospital, 2183 Main Street, is a field unit of the United States Public Health Service for the Government medical care of its beneficiaries. In operation since 1909, it has a capacity of seventy-five beds.

The beneficiaries treated here are American and foreign seamen, officers and enlisted men of the Coast Guard, officers and enlisted men of the U S Army, U S Navy, U S Marine Corps, and other federal employees. During the past year, some 5,000 outpatients received treatment, in addition to the inpatients. M S Lombard, medical director of the United States Public Health Service, is the medical officer in charge.

One of the leading institutions in the country for the treatment of children is the Children's Hospital, 219 Bryant Street. It has extensive facilities for the treatment of all kinds of diseases and is equipped with some of the most modern facilities in the Buffalo area.

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C E W

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## Correspondence

THE INTERNATIONAL GRENFELL ASSOCIATION

Sir Wilfred Grenfell, K C M G, M D, Founder

156 Fifth Avenue, New York City

Telephone CHelsea 3-1646

### To the Editor

We shall have an opening at the main hospital station of the International Grenfell Association at St. Anthony, Newfoundland, for a house officer on a twelve or fifteen months' contract commencing July 1, next.

This is an exceptionally interesting appointment with opportunity for varied surgical and medical experience in a modern eighty-bed hospital, with T B and convalescent annexes, in unusual surroundings. Applicants must be

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Yours sincerely,

KATHLEEN YOUNG  
Staff Selection Committee

April 1, 1941

## RENAL FUNCTION TESTS

DONALD D. VAN SLYKE, Ph D., New York City

THE modern theory of renal function reached from work in the laboratories of Richards, Marshall, Smith, Shannon, and others<sup>1, 2</sup> is that as the blood courses through the glomerular capillaries a part of the plasma water is filtered out into the capsular spaces of the glomeruli. This fraction appears to be usually about 20 per cent of the total plasma water. With this water are filtered all the sugar, salt, urea, uric acid, creatinine, and other noncolloidal substances dissolved in the water as it circulates in the plasma. The rate of glomerular filtrate formation in man appears to be at the rate of about 6 L. per hour, or 150 L. per twenty-four hours.

### Renal Physiology on Which Function Tests Are Based

The filtrate is formed by mechanical filtration. All the dissolved substances of the plasma are in it, not only those such as urea and uric acid, which are waste products to be gotten rid of, but also the glucose and bicarbonate, which are needed in the body. Other substances such as the water and salt of the filtrate are filtered in much greater amounts than the body can afford to lose. To let the waste products pass into the urine and at the same time to save the blood substances that are needed in the body, the cells lining the tubules exert a highly selective action in reabsorbing the needed substances and letting pass into the urine the waste products and such amounts of sodium chloride, water, and other partially needed materials as are required to maintain normal volume and composition of the body fluids.

Besides their power of selective reabsorption the tubules have a reserve function of excretion; the tubular cells can pick foreign substances, such as injected dyes, from the blood and extrude them into the tubular lumina, whence they pass into the urine. This function appears to have no important part in man in the excretion of naturally occurring urinary substances; it is a reserve power used to handle foreign substances that cannot be excreted by means of glomerular filtration. Tubular excretion is the process by

which injected phenolsulfonphthalein is excreted.<sup>1, 2</sup>

As the result of comparing various tests of renal function in the nephritic clinic of the Rockefeller Hospital we have reduced our routine tests to two—(1) the urea clearance as an indicator of changes in glomerular excretion, and (2) the urine specific gravity test as a measure of tubular reabsorbing power. Many other tests are in the literature and can yield results of value. The above two, however, yield all the information that is usually necessary for diagnostic purposes, they are simple to carry out, and the technic is based on methods that do not easily go wrong. The creatinine clearance gives results quite similar to those of the urea clearance, but it is less practical because the methods for determination of the true creatinine content of the blood are difficult—part of the substance determined in older blood creatinine analyses has been shown by Dubos and Miller not to be creatinine at all but other materials that give the creatinine color test. To obviate the error from these substances involves the use of a special enzymic technic which is not practical for a routine laboratory. Without this elaboration of technic, creatinine clearances are not of even approximate accuracy.

There are a number of specific gravity tests in the literature. Most of them depend upon restricting fluid intake for a certain length of time; the specific gravity is measured in the urine passed during the latter part of the restricted period. It does not matter greatly what regimen is used for such a test so long as the range of specific gravities yielded by it in normal subjects is established and the deviations that accompany renal diseases of different types of severity are ascertained. In our clinic the concentration test technic developed by Addis<sup>1, 2</sup> is used. It consists of putting the patient on a dry diet for twenty-four hours, from one morning to the next, and determining the specific gravity in the urine passed during the last twelve hours of the twenty-four. This technic has the advantage that it also yields a urine fit for the sediment count of Addis.

For simplicity, the present discussion will be limited to the technic and results of the

Read by invitation at the Annual Meeting of the Medical Society of the State of New York, New York City, May 9, 1940.

From the Hospital of the Rockefeller Institute for Medical Research, New York City.

pneumonia for the last thirteen years, showing an average mortality of 39 per cent from 1928 to 1938, inclusive, and an average mortality rate of 9 per cent for 1939 and 1940

Mercy Hospital also will give a demonstration on the technic of the maternity department in its care of the newborn. The blood bank in operation also will be demonstrated. Taxi service to and from Mercy Hospital will be provided for convention delegates who wish to attend. Sister Mary Gerard is superintendent.

Of tremendous interest to delegates should be the State Institute for the Study of Malignant Diseases, 663 North Oak Street. Organized in 1898, the institute is the oldest laboratory and hospital for research in cancer in the country. It has a 100-bed capacity and is equipped with the most modern facilities for the irradiation treatment of cancer, together with a modern radiographic department and a large outpatient department.

The institute renders free pathologic diagnosis to any physician in New York State and a free diagnostic clinical service to assist family physicians and patients in arriving at a diagnosis of cancer. Dr. Burton T. Simpson is director.

The United States Marine Hospital, 2183 Main Street, is a field unit of the United States Public Health Service for the Government medical care of its beneficiaries. In operation since 1909, it has a capacity of seventy-five beds.

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subject lies down during the test or walks about Van Slyke, Alving, and Rose<sup>21</sup> found in examinations that it made no difference in any patient who showed more than 50 per cent of normal clearance, but 3 out of 12 of their nephritic patients with less than 50 per cent normal function showed lower clearances if they were up and about. It is therefore desirable that nephritic patients who have advanced to less than 50 per cent of normal clearance rest in a reclining posture during the test, but in other subjects it is not essential.

It is desirable to promote a fairly free flow of urine during the test in order to diminish the relative error caused by retention of urine in the collecting tubules and bladder at the voidings. For this purpose we routinely give two glasses of water, one at the beginning of the test and another an hour later after the first specimen of urine has been collected. This is the only special preparation of the subject which we routinely follow. It may be omitted when for any reason it is desirable to do so.

*Collecting the Urine*—It is desirable to collect two specimens of urine, each over a measured period for which about an hour is a satisfactory time. A single specimen of blood for analysis drawn near the middle of the two-hour interval serves for comparison with both urine specimens. In consequence, two clearances are measured with only one drawing of blood.

To start the first period, the subject, after drinking his first glass of water, empties his bladder completely without saving the specimen, and the time is recorded or a stop-watch is started. At the end of approximately an hour the subject again voids completely, and the specimen is saved (period 1). At the moment when the subject finishes voiding, the time is recorded as the first period, and the watch is immediately restarted for the second period. The subject then drinks his second glass of water.

At approximately the end of the second hour he again voids completely. The time of this period is accurately recorded, and the specimen is saved (period 2).

It is not necessary that the duration of each period shall be an hour. It may be longer—up to several hours—or it may be shorter than an hour, provided enough urine (preferably over 50 cc) is voided to prevent undue error from the volume retained. The essential things are that the time be exactly recorded and that the complete urine content of the bladder be ob-

tained. The person in charge of the urine collection should be impressed with the fact that there is no need of making the collection periods exactly an hour each but that it is necessary to record exactly the time at which the voiding of each specimen is finished.

In some patients it is impossible to obtain urination at will. In such cases one may continue the collection period for several hours until spontaneous urination occurs, provided the time is accurately recorded. Especially in young children, it is frequently necessary to wait for spontaneous urination. For these, an automatic recording device described by Farr<sup>5</sup> is a great advantage.

*Urine Measurement*—The urine from each period is measured within 1 per cent. Accurate graduate cylinders of 25, 50, 100, and 200 cc are kept at hand, and the smallest that will contain the specimen is used.

*Collecting Blood*—At about the end of the first hour of the usual two-hour test, a sample of blood is drawn for analysis. Ordinarily, when no urea has been administered, the change of blood urea content is slow so that a matter of a half hour, sooner or later, is not important. We usually draw about 2 cc of blood, which is sufficient for duplicate urea analyses by the manometric hypobromite method<sup>16</sup> by which an analysis can be done in four minutes. When, however, economy of blood is desirable, 0.2 cc is taken from a finger or ear or, for small children, from the heel as described by Drucker and Cullen,<sup>4</sup> and the urea is determined by microanalysis.

*Normal Variation of the Clearance*—Physiologic experiments have shown that in normal animals the urea clearance varies parallel with the renal blood flow, which undergoes spontaneous changes from moment to moment. Also, Smith and Goldring<sup>18</sup> report evidence that varying constriction of the efferent arterioles of the glomeruli can vary the percentage of plasma water filtered and, hence, the clearance. Consequently, variation of the clearance over a certain range is an entirely normal phenomenon—is, in fact, an evidence of normal functional elasticity of the kidneys. The usual range in man is approximately from 75 to 130 per cent of average normal. Occasionally, a single clearance determination on a normal subject will fall outside this range.

As a clearance decreases in a nephritic case, the variability becomes less, e.g., when the mean clearance is reduced to 10 per cent of average normal, the fluctuations are likely to be limited to between 8 and 12.

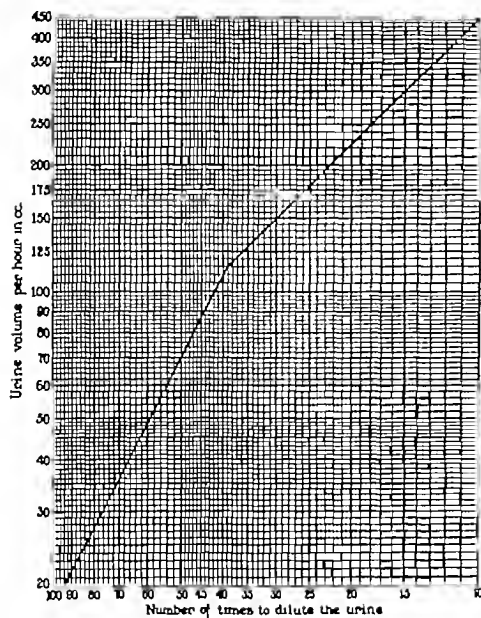


FIG 1 Chart indicating the number of times urine is to be diluted in order to make the urea concentration equal to the blood urea concentration when the urea clearance is normal. When the urine is so diluted, the ratio, 100  $U/B$  indicates the percentage of normal urea clearance, where  $U$  is the urea concentration of the diluted urine and  $B$  is the urea concentration of undiluted blood. From Van Slyke and Cope.<sup>22</sup>

urea clearance, the specific gravity test, and the familiar phthalein excretion test.

## The Urea Clearance

**Definition and Significance of the Urea Clearance** \*—The average normal adult, when excreting urine in fairly abundant volume, excretes per minute the amount of urea contained in 75 cc of his blood. Excretion suffices to clear the urea from 75 cc of blood in one minute. Hence we use the term "urea clearance" to indicate the volume of blood that one minute's excretion clears of urea.

The same volume of blood is cleared, regardless of whether its urea content at the moment is high or low. If, by feeding urea, the blood content is greatly increased, the excretion rate increases proportionately so that the amount of urea excreted per minute remains equal to the amount contained in 75 cc of blood. Consequently, the clearance is not affected by variations in the rate at which urea is formed, the same clearance

values are obtained in the fasting subject as after a protein meal has raised the blood urea.

"Clearance" serves as a convenient term to picture the direct relation between blood urea content and rate of excretion. A clearance of 75 does not indicate that 75 cc of blood flow through the kidneys per minute with complete removal of the urea. On the contrary, to judge from experiments carried out by Rhoads, Hiller, Alving, and Van Slyke,<sup>24</sup> about ten times as great a volume of blood perfuses the kidneys, and only one-tenth of its urea is excreted.

**Calculation of the Urea Clearance**—The clearance can be calculated from blood and urine urea contents and the rate of urine excretion by formulas,<sup>11,14,15,19</sup> but perhaps the simplest way is to dilute the urine a certain number of times, depending upon the volume excreted per hour, and then compare the urea content of urine with that of the blood. The percentage of normal urea clearance is then indicated simply as

$$\text{Percentage of normal urea clearance} = 100 \times \frac{\text{Concentration of urea in diluted urine}}{\text{Concentration of urea in blood}}$$

Fig 1 indicates the extent to which the urine is to be diluted.

A simple colorimetric urea clearance determination has been published<sup>22</sup> in which no absolute urea determinations are required. The urine diluted according to Fig 1 is simply compared colorimetrically with the blood in the two cups of a colorimeter, and the percentage of normal urea clearance is given by the colorimeter reading.

Occasionally, a clearance is required on a single kidney. To calculate its excretion in percentage of the normal, the observed urine volume obtained from the single kidney is multiplied by 2, and dilution by Fig 1 is made according to the doubled volume.

For children, a correction for body size is made by multiplying observed urine volume

by the factor  $\frac{1.73}{\text{square meters body surface}}$ . The urine volume thus corrected is applied to Fig 1.<sup>11,15</sup>

## Technic of Collecting Blood and Urine for the Urea Clearance

**Preparation of Subject**—Except in fairly advanced cases of nephritis, it ordinarily makes no significant difference whether the

\* An outline of the physiologic work from which the clearance evolved may be found in the chapter on Urea in *Quantitative Chemical Chemistry*, vol 1, by Peters and Van Slyke.

### The Specific Gravity Test<sup>1,2</sup>

The patient, after breakfast at the beginning of a twenty-four-hour period, takes no fluids until breakfast the next morning. During the last twelve hours of the period the urine is collected separately and its specific gravity is determined, the gravity of water at the same temperature being taken as 1.000. If much albumin is present, the albumin content must, for accurate results, be determined and a correction made for its effect on the specific gravity. The correction is made as shown by Lashmet and Newburgh,<sup>10</sup> by subtracting from the observed specific gravity 0.003 for each per cent of protein in the urine. A patient with normal kidneys will practically always void, during the last twelve hours of the test period, a urine with a gravity over 1.026.

### The Phthalein Excretion Test

The determination of the excretion rate of phenolsulfonphthalein after intravenous or subcutaneous injection was introduced in 1912 by Rowntree and Geraghty<sup>14</sup> and was the first excretory test to gain general application. It has been immensely useful and is still much employed. In the original form in which the amounts of dye excreted after one and two hours were measured, comparative tests showed<sup>25</sup> that the phthalein excretion was much less sensitive than the urea clearance. Some chronic cases with obvious nephritis, which showed by the clearance as little as one-third of normal excretory ability, still gave phthalein outputs within the normal range. For this reason, as well as for the fact that the phthalein test is complicated by quantitative injection of a foreign substance, the test was abandoned in our clinic after the urea clearance had become established.

Later, Shaw<sup>17</sup> improved the phthalein test by always making the injections intravenously and by collecting the urine in fifteen-minute intervals, the subject being given plenty of fluids before the test in order to assure a free flow of urine. Chapman and Halstead<sup>3</sup> found the test as sensitive as the urea clearance. Freyberg<sup>6</sup> has compared this test in a series of nephritic and normal patients with the colorimetric urea clearance test. He found that when the excretion during the first fifteen minutes (normally 30 to 50 per cent of the injected dye) was used the phthalein test fairly closely paralleled the urea clearance. However, Freyberg found the urea clearance simpler to carry out with accuracy and subject to fewer sources of error.

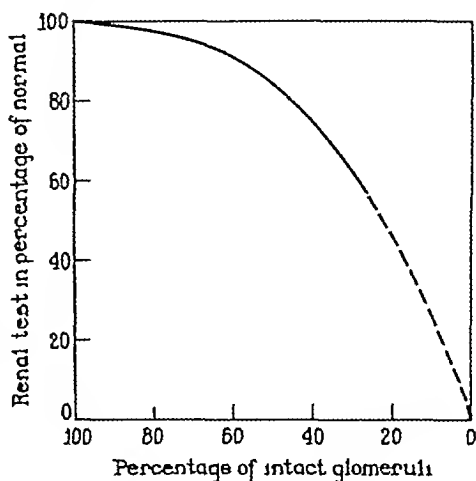


FIG 3 Relation of proportion of perfusable glomeruli to urea clearance in nephritic subjects. The curve indicates approximately the mean relation found by Hayman and Johnston.<sup>9</sup>

As shown by Marshall,<sup>12</sup> phthalein is excreted almost entirely by extrusion from the tubules instead of by the glomerular filtration which removes natural excretory products from the blood. The fact that the fifteen-minute phthalein test parallels the urea clearance in most cases indicates that when the excretory units are damaged in nephritis the damage affects the entire unit. However, in advanced nephritis the phthalein output is likely to approach zero<sup>25</sup> and fail to indicate further changes in renal condition.

*Interpretation of the Urea Clearance in Nephritis in Terms of Glomerular Damage*—Hayman and Johnston<sup>9</sup> have counted the perfusable glomeruli in the kidneys of patients dying with various degrees of impaired urea clearance and have found that the fall in clearance was a function of the proportion of glomeruli destroyed. It was not a simple direct proportion. The destruction of 50 per cent of the glomeruli did not cause a 50 per cent fall in urea clearance—only about 20 per cent. Presumably, the remaining half of the glomeruli by increased activity compensated in part for their decrease in number. This conclusion from Hayman's results is in accord with the observation of Foster.<sup>7</sup> His nine patients who had undergone unilateral nephrectomy and who after recovery had returned to normal life were found to have urea clearances within the normal range for subjects with both kidneys intact. As destruction of glomeruli proceeds beyond the 50-per-cent point, the urea clearance falls at

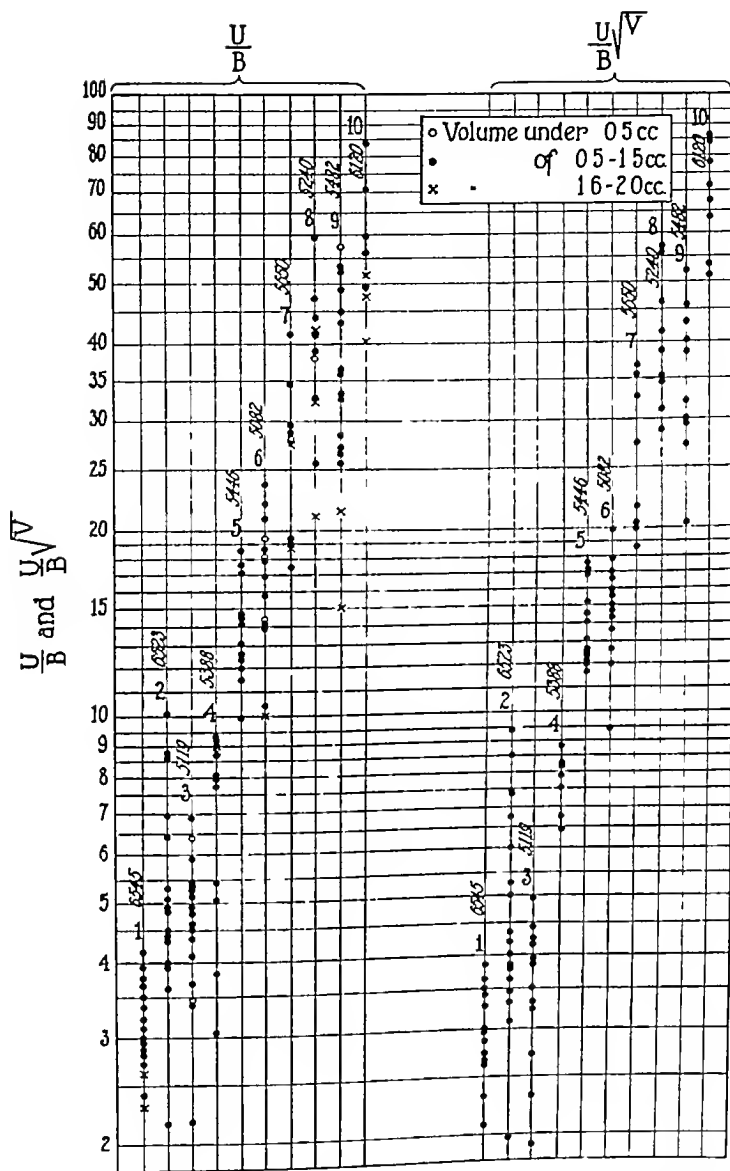


FIG. 2. Comparison in 10 nephritic patients of the range of the values of the urea concentration ratio,  $U/B$ , with the urea clearance

*Use of Urea Concentration Ratio in Place of Urea Clearance*—In some cases it is inconvenient or impracticable to obtain urine passed during definite time intervals. The patient may not be able to spend the necessary time for the collection, or he may have bladder retention which makes complete voiding impossible. In such cases one can determine the ratio (urea concentration in urine/urea concentration in blood) in place of the clearance if the urine is passed under

conditions that guarantee that the volume will be less than 100 cc per hour.<sup>22</sup> If the urine is passed in the morning before fluids have been taken, it can usually be assumed that this condition is met. The concentration ratio in a normal subject will then usually be above 50. In nephritic subjects one can estimate roughly the percentage of normal urea clearance by multiplying the urea concentration ratio by 2 (see Fig. 2).

always becomes chronic. We have seen 1 or 2 children with acute nephritis break this rule and recover after continuing more than four months with minimal clearances, but such fortunate cases are exceptions.

Return of clearance to normal does not always demonstrate complete recovery or even escape from the danger of a subsequent chronic course ending in uremia. So long as low specific gravity, hematuria, urinary casts, hypertension, or any other of the abnormalities that accompany nephritis are still evident, renal disease is still present and may progress even though excretory function is normal for the time being. A normal renal function test does not prove the absence of pathologic lesions in the kidneys. In Fig 6 is shown a case that, after approaching functional recovery, went into a chronic progressive nephritis and died after two years in uremia.

**Urea Clearance and Specific Gravity Tests in Chronic Nephritis.**—The early stages of chronic nephritis may not show much reduction in the clearance, especially when the case is predominantly of the nephrotic type with insidious onset. The urea clearance may be nearly or quite within normal range. On the other hand, many cases, as soon as they can be diagnosed as chronic, show clearances down to one-half or one-third of normal.<sup>16</sup> The prognosis depends to a considerable part on how rapidly the clearance continues to fall. A steadily falling clearance, as in the case of Fig 5, leads with tragic sureness to uremia. But relative stabilization may occur at any point above 20 per cent of normal, and both renal function and clinical condition may remain unchanged for periods of a year or more.

By the time the clearance has fallen to 30 per cent of normal, the specific gravity has usually reached its bottom level in the range 1.008 to 1.012 as shown in Fig 6. As renal function falls from this point downward, one must depend entirely on the clearance for evidence of the changes because the specific gravity can fall no further.

The relative behaviors of the clearance and specific gravity tests may be summarized by stating that, in most cases, the specific gravity is the more sensitive indicator of mild degrees of damage, while the clearance must be relied upon to indicate changes in the more severe degrees.

If the specific gravity shows a normal result, it is usually unnecessary to measure the clearance also. But if the specific gravity is low, a clearance must be done to find whether it is

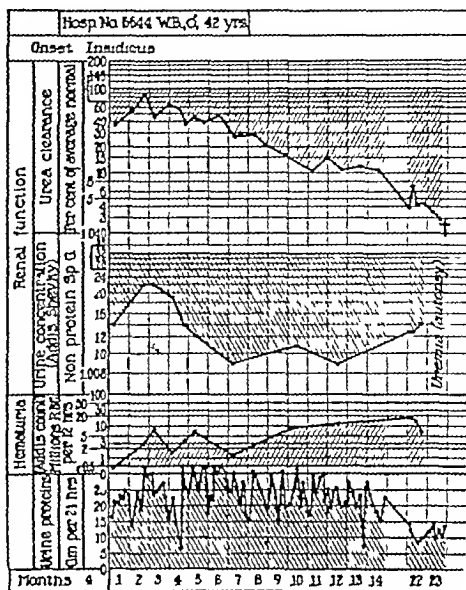


FIG 6 Course of a case of Bright's disease with apparent move toward recovery in first months, followed, however, by a steady progress of renal destruction and death in two years with a urea clearance 3 per cent of normal. The urine specific gravity in Addis concentration tests reached bottom value six months after admission when the clearance was still 30 per cent of normal and was unaffected by the further progress of the disease. From Alving and Van Slyke.<sup>2</sup>

in the range of 30 or 40 per cent, which might be consistent with a subjectively well and active condition for several years, or whether the clearance is below 10 per cent with uremia due in a short time.

### Urea Clearance and Uremia

With regard to the relation of uremia and the clearance, it has been found that, regardless of the origin or nature of the renal injury, when the urea clearance falls to 5 per cent of normal the clinical condition of uremia is either present or imminent. This is true even when the fall in clearance is due to such extrarenal causes as surgical shock, if the condition continues.

### Changes in Clearance Caused by Influences of Extrarenal Origin

As pointed out by Arthur Fishberg,<sup>6</sup> conditions of shock or depression in which the blood is withdrawn from peripheral circulation may depress renal function almost to zero, presumably because the renal blood flow is decreased in the peripheral circulation. Such a state occurs in traumatic shock, in

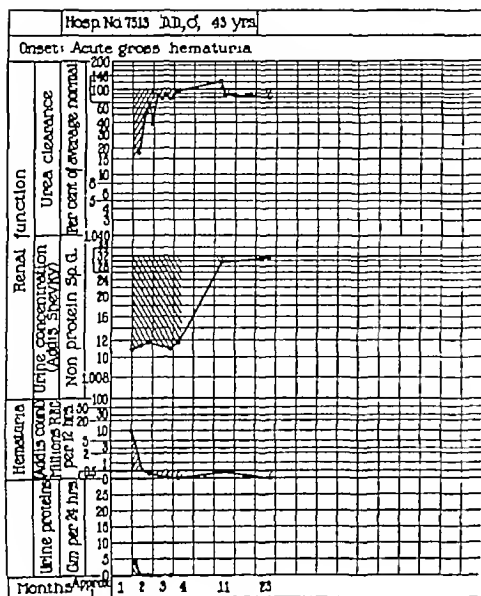


FIG 4 Course of a case of acute nephritis with recovery. The urea clearance began to return to normal within one month after onset and in two months reached normal. The specific gravity obtained in the Addis concentration test did not improve at all during this interval but was normal seven months later. From Alving and Van Slyke.<sup>2</sup>

an increasingly rapid rate. The mean relation between the number of surviving glomeruli and the urea clearance found by Hayman is shown by Fig 3.

Besides glomerular destruction, the urea clearance can be diminished by shock and other conditions that retard the renal blood flow or lower the blood pressure in the glomerular capillaries and by the back pressure of partial obstruction of the urinary tract. These influences of extrarenal origin will be discussed later.

**The Urea Clearance and Specific Gravity Tests in Acute Nephritis**—In mild cases of acute or initial nephritis, renal function may not be at all affected. In severe cases, on the other hand, the clearance may fall to a fraction of normal and the specific gravity to the uremic range in the neighborhood of 1.010. Such a case is shown in Fig 4. Decrease in function in acute nephritis does not necessarily carry a grave prognosis. Such severe cases may recover completely as did the one shown in Fig 4.

In comparing the clearance and the gravity test, an interesting difference is often shown in the rapidity with which they return to normal during recovery from acute nephritis.

The clearance may reach normal weeks or months before the gravity even begins to rise. This behavior is exemplified in Fig 4. Three months after onset the urea clearance had returned completely to normal, while the gravity was still unchanged at 1.011. When the patient returned for examination seven months later, both clearance and specific gravity were normal. In Fig 5 is shown the case of a boy who for five years showed a

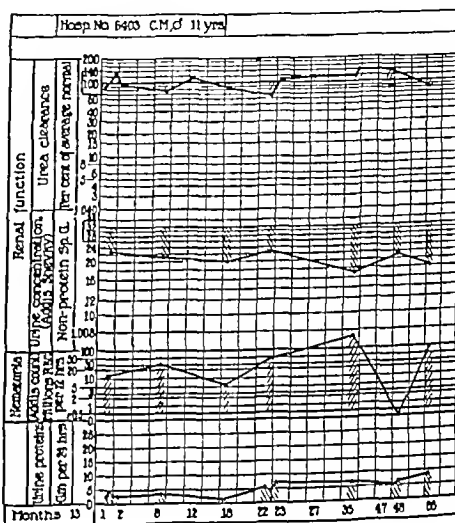


FIG 5 Course of a case of Bright's disease with normal urea clearance and subnormal urine concentration which persisted over five years. Proteinuria and hematuria confirmed the low specific gravity in indicating persistence of renal pathology. The patient has since recovered completely, insofar as clinical, urinary, and functional findings can show. From Alving and Van Slyke.<sup>2</sup>

subnormal specific gravity in the presence of a normal clearance. Eventually complete recovery occurred. It appears that in the milder degrees of renal damage the specific gravity is often more sensitive than the clearance. In terms of renal physiology, the concentrating function of the tubules is likely to show damage when the filtering function of the glomeruli does not. Often both tests are affected alike, but, when only one shows a decrease, it is almost always the specific gravity.

With regard to the prognosis of acute nephritis, it has been found<sup>25</sup> that in cases where the urea clearance has fallen a *beginning* of a rise toward normal almost always occurs within four months of onset if recovery is to follow. When four months pass without a rise in the clearance, the condition almost

always becomes chronic. We have seen 1 or 2 children with acute nephritis break this rule and recover after continuing more than four months with minimal clearances, but such fortunate cases are exceptions.

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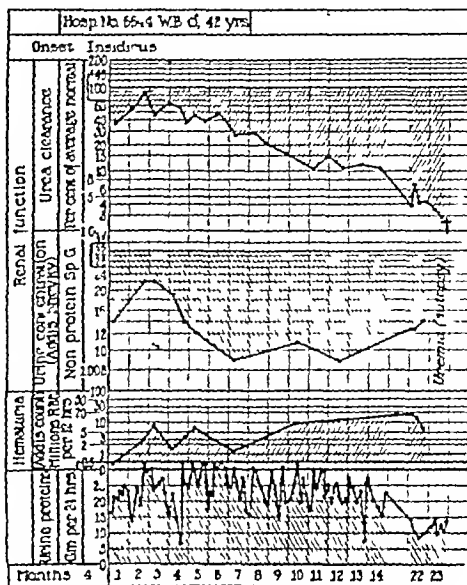


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With regard to the relation of uremia and the clearance, it has been found that, regardless of the origin or nature of the renal injury, when the urea clearance falls to 5 per cent of normal the clinical condition of uremia is either present or imminent. This is true even when the fall in clearance is due to such extrarenal causes as surgical shock, if the condition continues.

### Changes in Clearance Caused by Influences of Extrarenal Origin

As pointed out by Arthur Fishberg,<sup>6</sup> conditions of shock or depression in which the blood is withdrawn from peripheral circulation may depress renal function almost to zero, presumably because the renal blood flow is decreased in the peripheral circulation. Such a state occurs in traumatic shock, in

gastrointestinal obstruction, in Asiatic cholera, sometimes in acute infections of children, and in various other conditions. The derangement, if it is not permitted to continue till fatal uremia develops, is temporary, and renal function is restored as soon as the circulation recovers. Examples of this type of renal failure are described by Wohl, Brust, and Freed.<sup>26</sup>

In surgery the conditions of reflex anuria of nervous origin is believed to occur. Ordinarily, however, the extrarenal nervous influences appear to play a relatively small part in causing the spontaneous variations in the clearance. Van Slyke, Rhoads, Hiller, and Alving,<sup>24</sup> in experiments on dogs, and Page and Heuer,<sup>13</sup> in observations on patients before and after renal denervation, could find no effect of denervation on either the normal level or the normal variability of the clearance.

Back pressure due to partial ureteral, prostatic or urethral obstruction may markedly diminish the clearance. Hence, the interpretation of a low clearance as evidence of renal damage is to be made with caution when such obstruction is present.

Before diminished clearance is interpreted as an indicator of renal destruction, the possibility of the existence of these extrarenal factors as causes of, perhaps, temporary diminution in renal function should be considered in any case that has not an obviously nephritic history and even in a case that has such a history if the urea clearance has suffered a sudden fall. Such a fall may be due not to accelerated renal destruction but to the added effect of one of the above extrarenal factors. The nephritic patient is more subject to conditions of collapse than the normal person, and in the person suffering from nephritis a smaller degree of shock will cause fatal renal failure. Vomiting, dehydration, and circulatory failure may cause a temporary fall in renal function. This may lead to uremic death long before it would be caused by the organic destruction of the kidneys.

## Summary

Studies of renal physiology indicate that the urea clearance serves as an indicator of glomerular filtration, while concentration tests with urine-specific determinations serve to indicate the ability of the tubules to concentrate the filtrate. The procedures for making these tests are outlined.

The concentration test is more sensitive than the clearance to slight degrees of renal

damage. Hence, if the concentration test yields a normal result, it is not necessary to measure the clearance.

On the other hand, the concentration test fails to show differences between moderate and severe renal damage. If the concentration test yields a urine of low specific gravity, it is necessary to determine also the urea clearance in order to ascertain whether the decrease in excreting power is serious. A specific gravity of 1.010 in the concentration test may in one case be accompanied by entirely normal excreting power and in another case by extreme loss of excretory power and onset of uremia. Excretory power and clinical condition follow the clearance—not the specific gravity.

A low clearance in an acute case does not necessarily indicate a grave prognosis. Complete recovery may occur.

Including various types of shock, numerous conditions of extrarenal origin without organic damage of the kidneys may so affect the renal circulation that kidney function is retarded to a severe degree, as pointed out by Fishberg. If permitted to continue, these conditions can result in death from renal failure in the absence of renal disease. As complications of renal disease, these conditions often bring on premature uremia.

When the clearance falls to 5 per cent of normal, regardless of the origin or type of renal condition, uremia is either present or imminent.

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## Discussion

Dr Ralph G Stillman, New York City—The medical profession owes a great debt to Dr Van Slyke and to those investigators who, like him, have worked in great institutions and have been successful in solving problems which by their very nature cannot be attacked by the practicing physician. One of the hopes of the practitioner of medicine has been that studies of the function of an organ might reach such completeness that the information so obtained would be of value in the diagnosis and treatment of disturbances of that organ. This hope appears to have been largely fulfilled in the development of the tests of kidney function, and we are now able, by the use of the methods that Dr Van Slyke has

discussed, not only to recognize the presence of reasonably well-defined damage to the kidneys but also, to a surprising degree, to estimate the extent of the damage and whether it is increasing or regressing. What is still more important, the technics described are comparatively simple and the inconvenience to the patient is minimal. This information has also been of tremendous assistance in the management of cases of nephritis, and it is likely that its use will bring about changes that will result in a more uniform treatment of this disease.

It is admitted that these tests are relatively insensitive, and thus must necessarily be so when we are dealing with an organ that possesses such an abundant reserve, but this is practically of little importance. The success that has been attained in this field encourages one to hope that the time is not far off when satisfactory tests of the function of such organs as the liver and the pancreas may be devised. The physician should be encouraged to supplement his clinical observation by the free use of the measures here presented, and he can be assured that both he and his patients will benefit thereby. I wish to express my appreciation of the opportunity to hear this clear presentation of an important subject by one who speaks with such unquestionable authority.

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# A STUDY OF PRIMARY STAPHYLOCOCCIC PNEUMONIAS OCCURRING AT THE ROCHESTER GENERAL HOSPITAL

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SINCE 1904 when Fraenkel<sup>1</sup> for the first time isolated the staphylococcus in pure culture from the lung of a pneumonia patient, there has been a slowly increasing number of reports dealing with staphylococcic pneumonias. These publications established the fact that there are pneumonias in which the staphylococcus is the only or at least the predominating causative organism.

In 1919 Chickering and Park<sup>2</sup> reported 153 cases of fatal staphylococcic pneumonias which developed in patients with infection of the upper part of the respiratory tract diagnosed as influenza. This number represented about 11 per cent of the total pneumonia cases under their observation. In 1927 Cole<sup>3</sup> reported on primary atypical pneumonias, and 9 per cent of these was associated with the staphylococcus. In 1929 Habbe<sup>4</sup> found that 17 per cent of the various anatomic forms of pneumonia was caused either by pure culture of staphylococci or by the staphylococci in combination with other microorganisms. Reimann,<sup>12</sup> reporting in 1933, characterized staphylococcic pneumonias as primary, bronchogenic infections of the lung, superimposed on some previous conditions, such as sore throat, influenza-like infection, asthma, malnutrition, etc. Macgregor's<sup>5</sup> publication in 1936 admitted that out of her 10 cases occurring in children there were only 4 with indication of antecedent infection of the respiratory tract. In the other 6 cases there was no evidence that the staphylococcus was not alone responsible. Reports by other authors showed the relative incidence of pneumonias due to staphylococci and revealed that the staphylococcic etiology of pneumonias is by no means rare.

The vigorous crusade against pneumococcic pneumonia during the past decade focused attention mainly on lung infections caused by the various types of pneumococci. The other bacterial agents, notably staphylococci, were not seriously considered as primary inciting agents of pneumonia and were left more or less in the background. Even pathologists have somewhat neglected to pay more attention to staphylococci and have

failed to search persistently for other bacteria than pneumococci in every postmortem case of typical or atypical pneumonia.

For this reason I studied my postmortem material of the past seven years, 1933 to 1939, at the Rochester General Hospital to see the subject in the light of personal observations. In about 1,400 autopsies during this period there were 144 cases of lobar and bronchopneumonias. Thirty-eight of these were caused by staphylococci, either as the only bacterial agent or as the predominating organism. In other words, about 25 per cent of all pneumonia deaths occurring at the Rochester General Hospital during a seven-year period was due to staphylococcic infection. Twenty cases occurred within the first year of life, 8 were found from the second to the tenth year, 4 during the third decade, and 6 cases above the fortieth year. Therefore, roughly about 75 per cent of the staphylococcic pneumonias occurred within the first decade of life.

## Gross Pathology of Staphylococcic Pneumonia

A fairly constant finding was the presence of tracheitis and bronchitis. Tracheobronchial mucosa was usually red, occasionally hemorrhagic. It was covered with mucus, with mucopurulent or purulent material, or with a sanguinopurulent exudate. In some cases the bronchi were filled with blood. The exudate often caused complete plugging of bronchi, thereby being responsible to a certain degree for the cyanosis observed during the sickness of a score of patients. Rarely was there no exudate in the bronchi.

The lesions in the lung parenchyma presented considerable morphologic variations in this series of cases.

Staphylococcic pneumonia when developing in the newborn during the first ten days of life appeared as lobular or lobar-type consolidation. The consolidated areas were firm, the cut section was dark red, hemorrhagic, and sometimes mottled with gray. The consolidations usually involved several lobes (Fig. 1) and not infrequently almost every part of both lungs. It seemed that in newborns the staphylococcic infection of the lungs was so overwhelming that death ensued early

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From the Department of Pathology and Clinical Pathology of the Rochester General Hospital.

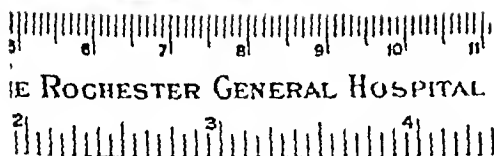


FIG 1

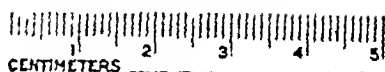


FIG 2

FIG 1 Lobular and lobar-type hemorrhagic consolidations of the entire right lung in the newborn due to *Staphylococcus aureus* infection (early stage of *Staphylococcus aureus* pneumonia)

FIG 2 Hemorrhagic consolidations of the lung with small spots of gray consolidation (later stage of *staphylococcic* pneumonia)

and the later stages of the disease had no time to develop

In older babies, particularly after the newborn period, and in other patients when the hemorrhagic consolidations did not involve the greater part of both lungs, reddish gray or gray consolidations developed (Fig 2). The disease lasted usually more than twenty-four hours when gray consolidations were present. In such areas later on, but not always, pinhead to pea-sized or larger abscesses developed (Fig 3). The abscesses were surrounded by red hepatization. Rarely, the gray or grayish yellow consolidations were small, the size of black pepper or smaller, and were arranged around small bronchi and scattered abundantly throughout both lungs without definite abscess formation.

There were 3 cases of *staphylococcic* lung infection with typical lobar-type pneumonia involving completely a single lobe in patients 55, 70, and 83 years of age. The consolidations were in the stage of grayish

yellow hepatization without the formation of abscesses (Fig 4).

The picture of diffuse capillary bronchitis with small patches of early consolidations was also observed. In such a case caused mainly by *Staphylococcus aureus*, the 3-month-old baby died in less than twenty-four hours after the onset of symptoms. Capillary bronchitis and abundant asphyctic hemorrhages of thymus, endocardium, and pleura were found at autopsy.

In this series of *staphylococcic* lung infections we found lung abscesses only in patients older than 10 days. Out of 38 cases, only 13 developed abscesses, therefore only about one-third of the series. Empyema was frequent and several times bilateral. It was present in 14 cases, 1 case being pyopneumothorax. In addition, several cases presented evidence of serofibrinous pleuritis.

Empyema was caused usually by rupture of a lung abscess into the pleural cavity. However, it was found to develop also without



FIG 3. Abundant small lung abscesses surrounded by hemorrhagic consolidations in the course of staphylococcic pneumonia



FIG 4. Lobar-type pneumonia due to *Staphylococcus aureus* involving the upper lobe in a 70-year-old patient

perforation of subpleural lung abscesses.

Furthermore, there were some cases of empyema in which lung abscesses were completely absent. The occurrence of empyema was not limited to children because it was observed with staphylococcic pneumonia at any age. The amount of empyema pus was at times quite considerable. For instance, in a 51-year-old patient 3 L of pus was found in one chest cavity. Other complications were also encountered, such as pericarditis, parotitis, and abscess of the leg, each being seen only once subsequent to the pulmonary pathology.

### Histology of Staphylococcic Pneumonia

Bronchi contained abundant blood, bloody pus, or only purulent exudate. The bronchial mucosa was markedly congested, often hemorrhagic, and ulcerated. There was no appreciable accumulation of inflammatory cells in the bronchial walls except in cases having chronic bronchitis or asthma before the onset of staphylococcic lung infection. Masses of staphylococci were present in the bronchial exudate in many cases. When the trachea showed inflammatory changes

they were similar to that found in the bronchi (Fig 5). In diffuse capillary bronchitis due to staphylococcus, the bronchi were plugged with mucus.

In the lung parenchyma the hemorrhagic consolidations were made up of alveoli filled with abundant red blood corpuscles (Fig 6). Masses of staphylococci were present without leukocytic barrage. Fibrinous exudate was scant or completely absent in the hemorrhagic consolidations. In more advanced cases, accumulation of leukocytes took place particularly around masses of staphylococci and abscesses developed (Fig 7). Frequently, there was necrosis around masses of staphylococci, and the leukocytic barrage was found only at a distance from the bacterial masses.

The abscesses were usually surrounded by hemorrhagic consolidations. However, fibrinous consolidations were also observed around abscesses, particularly with mixed infections.

In general, fibrinous exudate in the alveoli was rather scanty, and it was not abundant even in the lobar-type staphylococcic pneumonias (Fig 8).

### Bacteriologic Studies

These studies included throat cultures whenever possible and sputum examinations when sputum was obtained. Cultures were taken at postmortem from lungs, empyema fluid, spleen, and occasionally from trachea and bronchi.

Throat cultures showed the presence of *Staph aureus* as the predominating organism up to 95 per cent in some throats. On the other hand, in 2 or 3 cases they were found only in small numbers or they were absent in spite of the subsequent finding of staphylococci pneumonia.

Unfortunately, sputum was searched for staphylococci but only in a few instances. However, in such cases the sputum showed abundant staphylococci. One of the staphylococci lobar pneumonia cases showed 98 per cent *Staph aureus* in sputum cultures.

Lung cultures were made practically in every case, and these revealed *Staph aureus* either in pure growth or as the predominating organism. The *Staph aureus* was either hemolytic or nonhemolytic. One case of pneumonia showed almost pure growth of hemolytic staphylococcus albus in a 2-month-old child, while a case of pneumonia of the new born showed only *Staph citreus*. Lung cultures of the 3 lobar pneumonia cases showed a pure growth of hemolytic staphylococcus aureus in 2 cases and as the predominating organism in the third case.

When the *Staph aureus* was the predominating organism in cultures of the lungs, one or two of the following bacteria were encountered besides the staphylococci: gram-negative bacilli, *Staphylococcus albus*, alpha and gamma streptococci, rarely beta hemolytic streptococci, and pneumococci. Tracheo-bronchial exudate was cultured a few times and a pure growth of *Staph aureus* was obtained. The spleen was cultured in 12 cases and revealed a pure growth of *Staph aureus* in 9 cases while the other 3 remained sterile.

### Clinical Symptoms

Newborn babies having staphylococci pneumonia showed cyanosis, dyspnea, and irregular, shallow respirations. Some bleeding from nose and mouth and discharge from the ears were occasionally noted. When the disease developed after the newborn period, some infants became suddenly ill with chest findings, while others, the majority, presented signs of infection of the upper part of the respiratory tract: congestion of the throat, cough, occasional hoarseness, fever,



FIG 5 Photomicrograph of trachea showing acute hemorrhagic tracheitis caused by *Staphylococcus aureus*.

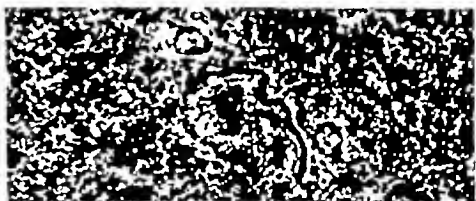


FIG 6 Histologic picture of the early stage of *Staphylococcus aureus* pneumonia. Abundant hemorrhages in bronchi and alveoli.

and difficult breathing. Practically every patient developed cyanosis. Signs of pneumonia with dullness, fine rales, and bronchial breathing developed afterward or simultaneously with the symptoms of the upper part of the respiratory tract. Chills were only rarely recorded. Patients over 10 years of age often presented chest pains as the first signs of their illness. Dyspnea, cyanosis, cough, sore throat, and raising of sputum were additional clinical features. At times, chill was observed at the onset of the disease. Only five blood cultures were done with positive staphylococci findings in 3 cases. The white blood count was elevated in the majority of the patients.

### Discussion

This series of staphylococci pneumonias augments the available reports on this subject and substantiates the conclusions that staphylococci pneumonia is not a rare disease. This is particularly true if we look at it from the mortality angle as compared to the total pneumonia deaths. Twenty-five per cent of all pneumonia deaths was due to staphylococci lung infection.

The etiology in the entire series of cases was found out only at postmortem examination. Lung cultures in every case showed *Staph aureus*, except once hemolytic staphy-

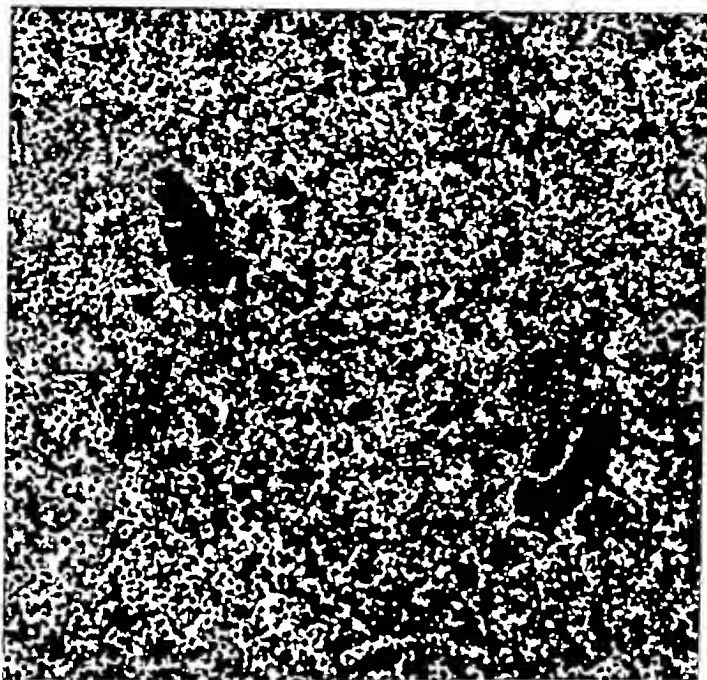


FIG. 7 Abscess in case of staphylococcic pneumonia. Masses of bacteria in the abscess.

*lococcus albus* and once *Staph. citreus* either alone or as the majority of the cultured organisms.

The clinical signs indicated that a large proportion of the patients had an infection of the upper part of the respiratory tract before the staphylococcic pneumonia developed. The high incidence of this type of pneumonia in children and the frequently associated empyema are borne out by this series of cases. It supports Cohen,<sup>8</sup> who believes that the most common cause of empyema in infants below 6 months of age is the *Staph. aureus*. It also supports Menten, Bailey, and De Bone,<sup>11</sup> who claim that *Staph. aureus* seems to have a propensity for inducing disease in infants that is not so evident in adults. However, I think that we must also consider the bacterial flora of the throat in newborns and infants.

Throat cultures of a series of 65 normal newborn babies up to 10 days of age were studied, and I found that 35 per cent of the babies showed a varying number of *Staph. aureus*. This is a much higher incidence than that reported by Shibley, Hanger, and Dochez<sup>12</sup> for a series of adults. This higher incidence of *Staph. aureus* in the throat of newborns may explain to some extent the relative frequency of staphylococcic pneumonia in newborns

and infants as compared to that developing in adults. Out of the 38 cases upon which this study is based, 19 cases, 50 per cent of the entire series, occurred in infants below 6 months of age.

Throat cultures taken before death from 7 patients revealed in 5 of them *Staph. aureus* as the predominating organism. This is confirming Chickering and Park<sup>3</sup> who suggested that the staphylococci invading the lung come from those residing normally as saprophytes in the secretions of the upper part of the respiratory tract. Woodward<sup>13</sup> considers the staphylococci not simply as saprophytes in the upper part of the respiratory passages but as potential pathogens of these regions. Accordingly, it would seem that when staphylococci are present in the sinuses or in the throat they are a potential menace to bronchi and lungs.

Histologic sections of lungs from newborns with staphylococcic pneumonia showed frequently aspirated, large epithelial cells and mucus in the alveoli and in some of the bronchi. Masses of staphylococci could be seen on the surface of the mucus in some cases. Therefore, it seems to me that staphylococcic pneumonia in newborns is frequently due to aspiration of mucus from the throat which harbors *Staph. aureus* in a fairly high per-

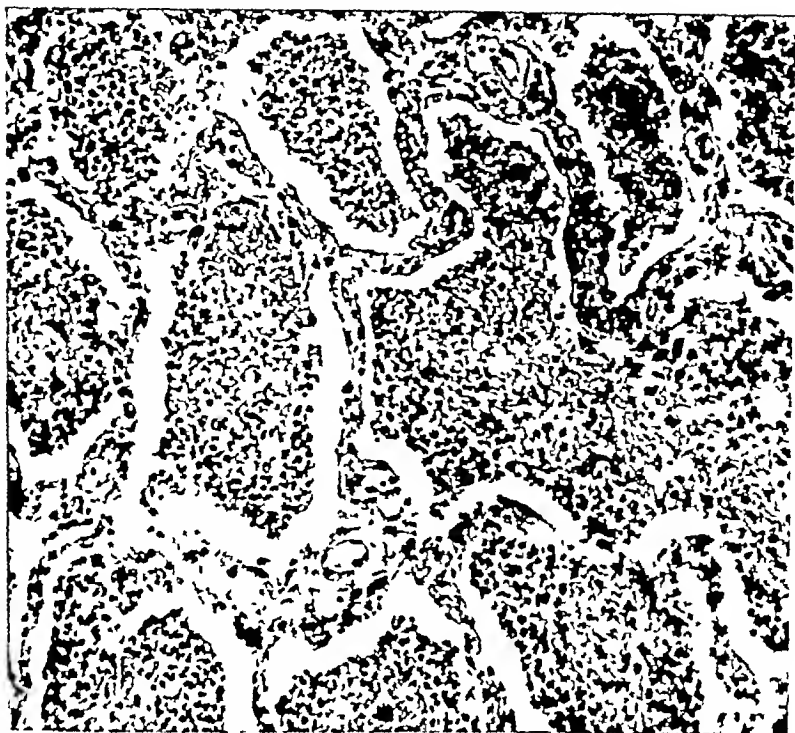


FIG 8 Histologic appearance of staphylococcic lobar pneumonia. It is almost identical with that caused by pneumococci.

centage of newborns. However, an exogenous infection is also possible. For instance, Gasul and Singer<sup>6</sup> thought that the aspiration of contaminated material may have been responsible for the staphylococcic lung infection in their case. Glaser<sup>7</sup> suggested the possibility of infection introduced by tracheal catheter or by some other trauma to the respiratory apparatus. Smith<sup>14</sup> reported a small epidemic of *Staph aureus* pneumonia among infants in a Glasgow maternity hospital. The epidemic followed cases of mastitis and skin infections in the same ward.

Aspiration staphylococcic pneumonia occurs also in children and adults. Bronchopulmonary exudates infected with *Staph aureus* may be dangerous in this respect, as the aspiration of staphylococcic pus will cause a fulminating hemorrhagic bronchitis with hemorrhagic pneumonia. In such a case of this series the fulminating infection followed bronchoscopy, and the patient died in a cyanotic attack a few hours after that procedure. Her face turned cyanotic and finally almost black. In another case the cauterization of a large lung abscess cavity was followed by fulminating staphylococcic pneumonia. Very

probably, aspiration of *Staph aureus* from the nose and throat was responsible for the fulminating staphylococcic sanguinopurulent bronchitis and hemorrhagic lobular pneumonia which almost immediately followed a swim and caused death of a 3½-year-old girl forty-eight hours later. At the postmortem of this case the bronchogenic character of staphylococcic pneumonia was strikingly demonstrated and showed the great damage the *Staph aureus* can do in the tracheobronchial mucosa within a short time.

The bronchogenic nature of staphylococcic pneumonias was fairly evident in the entire series of cases. Abscesses were formed in about one-half of the series. Culture of the abscesses yielded many times only pure growth of staphylococci. This observation and that of others seems to be somewhat contrary to the experimental findings of Mc Cordock and Muckenfuss<sup>10</sup> who were able to produce lung abscesses only if the staphylococci were injected together with vaccine virus into the lungs of rabbits.

In order to see experimental lung lesions produced by *Staph. aureus* in rabbits, a series of fourteen rabbits was injected intratrache-

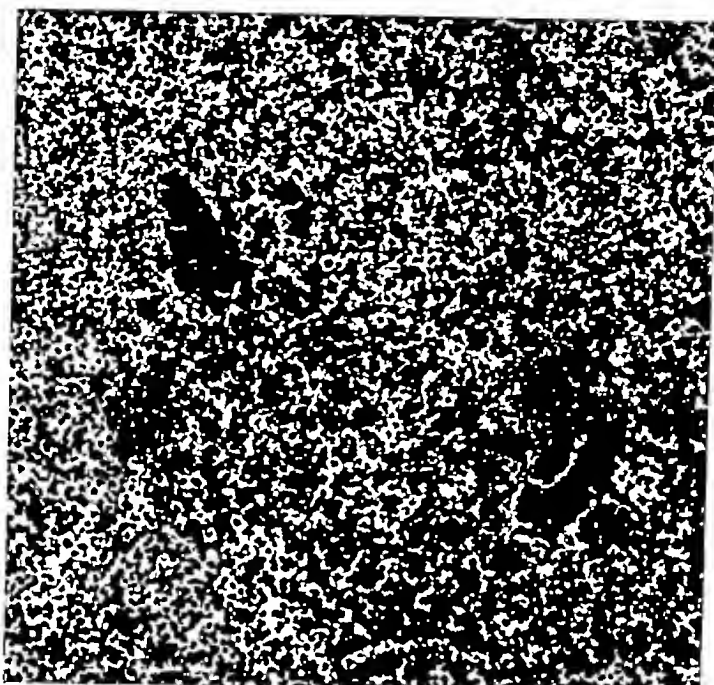


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# PERIRENAL AND SUBPHRENIC INFECTIONS

JOHN H. POWERS, M D, Cooperstown, New York

THE purpose of this paper is to present two small groups of cases in which early diagnosis is both rare and difficult—cases which have many etiologic features and clinical characteristics in common and which, even at operation, may occasionally be difficult to allocate definitely to the province of urology or general surgery. I refer to inflammatory lesions around the kidney and beneath the diaphragm.

During the past nine years 20 such patients have been studied at the Mary Imogene Bassett Hospital. Twelve were classified as cases of subdiaphragmatic abscess, 5, as perirenal, and 3 were difficult to place with certainty in either category. Because of the history of the disease and the nature of the infecting organism, 2 of these last were regarded as primarily perirenal and 1 was classified as subdiaphragmatic.

## Pathogenesis

The etiology of perinephritic and subphrenic infections is an interesting subject. Both spaces are susceptible to infection by the same methods: (1) by direct extension from an abscess in an adjacent organ or by intra- or retroperitoneal gravitation of pus from a suppurative process elsewhere in the abdomen, and (2) by metastatic invasion from a distant, frequently superficial focus, either through the blood stream or the lymphatic system.

In 1910 Miller<sup>1</sup> discussed the anatomy of the kidney and perinephrium and called attention to the continuity, through the lateral lumbar chains, between the lymphatics of these structures and those of the posterior abdominal wall, the lower urinary tract, the pelvic organs, the external genitalia, and the lower extremities. While admitting that some perinephritic abscesses start from an adjacent diseased kidney, he believed that these did not comprise more than one-quarter of the total number and held that the more common type was due to infection from the drainage area below the kidney or to hematogenous invasion. More recently, Vermooten<sup>2</sup> has analyzed the postmortem records of 26 cases of staphylococcal bacteremia and septi-

cemia in which multiple cortical abscesses were found in both kidneys, only 1 of which had ruptured into the perirenal tissues. He concluded that "the occurrence of an acute suppurative perinephritis secondary to bacterial staphylococcal emboli in the end arteries of the perinephrium is a definite disease entity and need have no relation whatever to the kidney except for the fact that the perinephrium happens to surround that organ."

In contradistinction to this opinion there are many eminent authorities<sup>3-8</sup> who believe that perinephritic abscess of (so-called) extrarenal origin is the result of blood-borne infection to the renal cortex, followed by one or more cortical abscesses with extension therefrom to the perirenal tissue.

I am in complete accord with the belief that invasion of the perinephrium by this method may occur. I do believe, however, that the absence of urinary symptoms in most of these patients, the absence of pus and bacteria in the urinary sediment, the frequent nonexistence of any demonstrable renal lesion at operation, the great facility with which bacteria may pass through the kidney without detention, the frequency of suppurative renal lesions without perinephritis, and the fact that the perinephrium has its own vascular and lymphatic systems all suggest that metastatic perirenal abscess may occur without any intervening abscess of the renal cortex.

In the two groups herein reported, 5 of the 7 cases of perirenal abscess were metastatic in origin, secondary to superficial cutaneous foci.

Subdiaphragmatic abscess, on the other hand, is nearly always due to rupture of an adjacent organ, gravitation of septic material from a perforated or leaking noncontiguous viscus or to lymphatic extension from a more distant intra-abdominal focus. In a recent review of 3,608 collected and personal cases Ochsner and DeBakey<sup>9</sup> found 72.2 per cent secondary to disease of the appendix, stomach, duodenum, liver, and bile passages.

Ten of the 13 cases of subphrenic abscess in my series were due to direct or lymphatic extension from perforations or inflammatory lesions of these same organs. Two patients with perirenal and 1 with subdiaphragmatic

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ally with *Staph aureus*. A 5-cc saline suspension of a twenty-four-hour growth of hemolytic staphylococcus aureus (2,500 million organisms per cubic centimeter) was injected into each rabbit. One rabbit was killed every day up to the twelfth day, then one on the sixteenth and one on the twentieth day. The rabbits developed tracheitis, bronchitis, and bronchogenic lung infection similar to that observed in human lungs. The infection did not kill the rabbits. The initial hemorrhagic consolidations were followed by small and large gray consolidations and small abscesses seen under microscope. The consolidations involved one-third to one-half of each lung. Staphylococci were recovered from the lungs in pure culture up to eight days after injection. After that day the lung cultures became completely negative. Masses of staphylococci were seen in the lungs under the microscope during the first day after the injection and disappeared gradually. The small abscesses became absorbed later on, and by the twentieth day one was able to see only congestion, some fibrosis, and the final stages of repair. Although the rabbit lung appears to possess better resistance to *Staph aureus* than does the human lung, nevertheless it demonstrates that *Staph aureus* can cause bronchogenic pneumonia and small abscesses without the association of any other organisms or virus.

Treatment consisted mainly of giving oxygen therapy and of general supportive measures. Specific treatment was given only in 2 cases in which pneumococci were also present in small numbers. Sulfanilamide was used in 1 case without any notable effects. Cecil and co-workers<sup>1</sup> found no evidence that sulfa-pyridine was of any benefit in staphylococcal pneumonia. Sulfamethylthiazole has not been tried out as yet in staphylococcal pneumonia. However, some other serious staphylococcal infections were apparently cured by this new drug which may bring a ray of hope for the more successful treatment of staphylococcal pneumonia.

### Summary and Conclusions

1 Primary staphylococcal pneumonia is bronchogenic and it is more common than generally thought.

2 One hundred and forty-four cases of fatal lobar and bronchopneumonias were autopsied during seven years at the Rochester General Hospital. Thirty-eight of these were caused by staphylococci either as the only bacterial agents or as the predominating

organisms. About two-thirds of the staphylococcal pneumonias occurred during the first decade of life.

3 Staphylococcal pneumonia usually followed upper respiratory disease, but this was not always the pattern.

4 The gross anatomic appearance was not always that of a bronchopneumonia with or without abscesses, but in several instances it was that of typical lobar pneumonia. In newborn babies staphylococcal pneumonia often appeared as hemorrhagic lobular or lobar pneumonia. Throat cultures and sputum examinations showed staphylococci as the predominating organisms in several cases in which the presence of staphylococci was reported.

5 A series of rabbits was injected intratracheally with saline suspension of hemolytic staphylococcus aureus. Pneumonia was produced, and, in addition, small abscesses developed in the lungs. However, the abscesses disappeared gradually and the entire infection healed if the rabbits were examined only about three weeks after the injection.

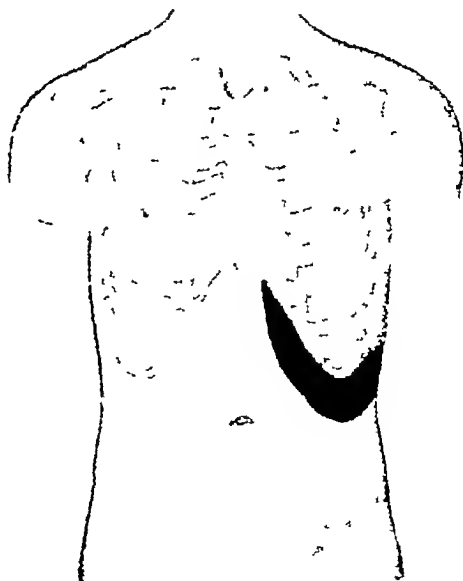
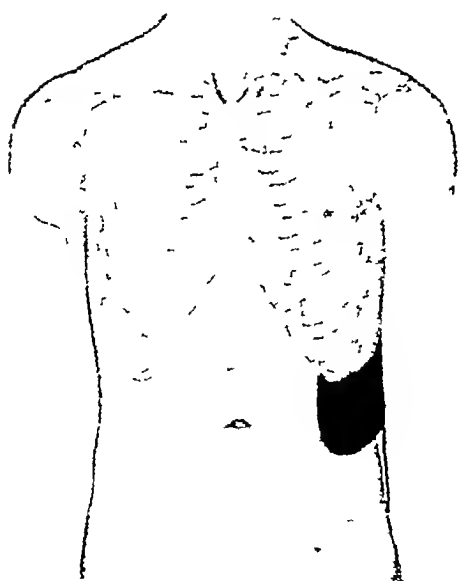
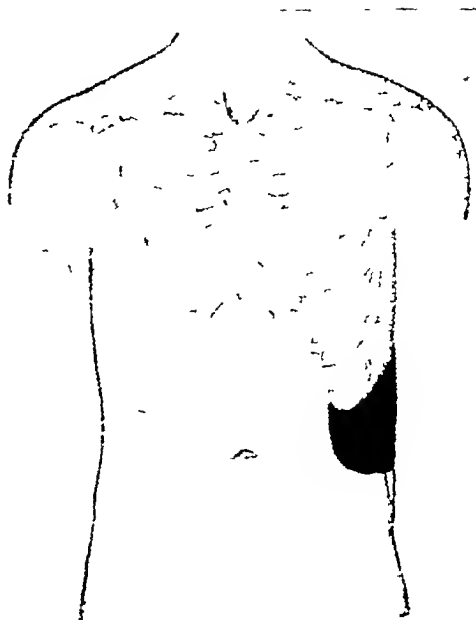
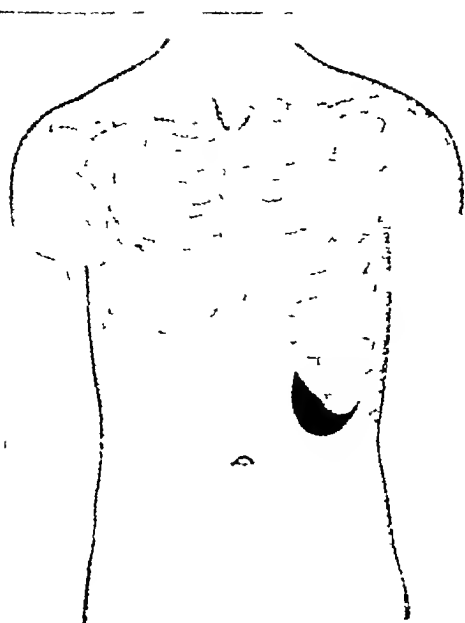
6 The study of throat cultures should be extended to include the *Staph aureus* in cases of infections of the upper part of the respiratory tract, in pneumonias, and in patients to be worked up for bronchoscopy and lung operations. Detection of staphylococci in large numbers may be of value in establishing the etiology of atypical cases. It may also be a warning and, perhaps, complications and high mortality can be reduced in the future.

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CASE 3

CASE 4.



CASE 7

CASE 8

FIG 1 Perirenal abscess (Cases 3, 4, and 7) Subdiaphragmatic abscess (Case 8) Sketches illustrate comparative size and position of abdominal mass.

TABLE 1—ETIOLOGY OF PERIRENAL AND SUBPHRENIC INFECTIONS

Pre-existing Disease	Coexistence of Previous Disease	
	P-R	S-D
Furuncle or superficial abscess	5	
Acute appendicitis with gangrene or perforation		2
Ulcer of duodenum with perforation		2
Abscesses of liver		3
Sinusitis		1
Septic endometritis		1
Cholecystitis and cholelithiasis (postoperative)		1
Diverticulum of duodenum (postoperative)		1
Carcinoma of stomach (postoperative)		1
None	2	1
Total	7	13

Code—P-R = Perirenal S-D = Subdiaphragmatic

TABLE 2—DURATION OF SYMPTOMS IN TWO EQUAL GROUPS OF PATIENTS WITH PERIRENAL AND SUBDIAPHRAGMATIC ABSCESES\*

Duration, Weeks	P-R	S-D
	7	16
	7	14
	2	4
	10	16
	4	8
	4	11
	8	12
Total	42	81
Average	6	11 6

\* Six patients developed a subdiaphragmatic abscess while in the hospital and are not included in this tabulation

abscess gave no history of antecedent infection (Table 1)

### Symptomatology

The nonspecific character of the onset of both perirenal and subdiaphragmatic abscess, the insidious nature of their development, and the difficulty of making an early diagnosis are well manifest in many cases by the long interval of time which frequently is allowed to elapse between the initial symptom of the disease and hospitalization of the patient. In these two groups the patients with perinephritic infection had been ill for an average period of six weeks each, and those with subphrenic lesions had had vague symptoms for three months before admission to the hospital (Table 2)

In truth, there is no characteristic initial symptom or train of symptoms that is pathognomonic of either disease. Fatigue, malaise, anorexia, and fever are frequent among the early complaints. Pain is occasionally the first symptom, but its location in no way serves to distinguish one type of infection from the other. Cough, when present, is suggestive of subdiaphragmatic irritation. However, a cough so troublesome and per-

sistent that it was diagnosed and treated by several physicians as pertussis was the first, in fact for several weeks the only, symptom of 1 patient in this group who had a small perirenal abscess secondary to a carbuncle of the kidney

As the diseases develop the patients lose weight and strength. Fever of the septic type is present and may be characterized by high peaks, each of which is not infrequently preceded by chilly sensations or an actual shaking chill. Nausea, vomiting, and generalized abdominal pain are common. With increase in the size of the inflammatory mass the pain is prone to localize in the upper abdominal quadrant, in the flank, or in the lumbar region. Pain in the shoulder synchronous with respiration or accentuated by deep breathing is suggestive of a subdiaphragmatic lesion. Dyspnea also is common when the abscess is situated in this region. Urinary symptoms in cases of true perinephritic abscess are infrequent.

### Physical Signs

As is true of the subjective symptoms, so is it also of the physical signs—there are no distinguishing characteristics that are pathognomonic of either perirenal or subdiaphragmatic abscess. Early in the course of a developing infection in either region, the signs may be entirely absent or quite misleading. If the abscess is located on the right side, tenderness in the lower abdominal quadrant may be so marked that appendicitis is suspected and an operation performed.

Frequently, the physical signs vary from day to day and even from hour to hour. Tenderness in a given area may be quite marked in the forenoon and completely absent in the evening of the same day.

Actually the most helpful late diagnostic sign among the patients in this series with perirenal abscess was a tender mass in the hypochondrium and flank. Such a tumor was present in 6 of the 7 cases, was commonly visible as well as palpable, frequently descended slightly with deep inspiration, and was formed by the abscess itself, by the kidney, or by both (Fig 1). However, a comparable mass was present in 1 patient with a large collection of pus beneath the diaphragm which had displaced the kidney downward and laterally (Figs 1 and 2). Consequently, such a tumor, while suggestive, affords neither constant nor positive evidence of perirenal abscess.

Tenderness in the flank is a frequent char-

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7	Perirenal	Carbuncle of kidney	No
13	Subdiaphragmatic	Ulcer of rectum, abscess of liver perforation of diaphragm empyema of pleura, right	No
14	Subdiaphragmatic	Carcinoma of gallbladder, secondary carcinomas of liver multiple abscesses of liver intraperitoneal abscess intracranial hemorrhage	Yes
15	Subdiaphragmatic	Multiple abscesses of liver	Yes
16	Subdiaphragmatic	Chronic cholecystitis, cholelithiasis calculus in common duct ulcer of duodenum local peritonitis serofibrinous pleurisy abscess of abdominal wall	Yes
17	Subdiaphragmatic	Large ulcer of duodenum with perforation beginning gangrene of lower lobe of lung right serous pleurisy, right	Yes
18	Subdiaphragmatic	Diverticulum of duodenum general peritonitis fibrinous pleurisy, right hydrothorax bilateral	Yes
19	Subdiaphragmatic	Carcinoma of stomach local peritonitis fibrinous pleurisy, right, broncho-pneumonia bilateral	Yes

even secondary to small subcapsular cortical abscesses

### Treatment and Results

All 7 patients in the group of perirenal abscess were operated on, 6 recovered. The infection in each instance was due to *Staphylococcus aureus* and in none of these cases was there any demonstrable lesion of the kidney. Honeycombing of the edges of the wound with small staphylococcal abscesses was a frequent postoperative complication. In the seventh case, drainage of what was strictly a perinephric abscess secondary to a localized renal carbuncle was followed by total infarction of the kidney and death (Table 3, Case 7).

Drainage in all cases was performed retroperitoneally through a transverse lumbar incision. There is no indication for any other approach.

Drainage of the subdiaphragmatic area was performed in 5 uncomplicated cases of subphrenic abscess. All the patients recovered. A two-stage transthoracic approach was used twice, a one-stage transthoracic approach entering the abscess through the diaphragm below the pericardium after resecting the costal cartilages of the left fifth, sixth, and seventh ribs was used once, a transperitoneal approach, once, and a retroperitoneal lumbar approach, once.

In 6 cases of subphrenic abscess the diagnosis was not made before death, 3 of these (Table 3, Cases 15, 16, and 17) were discovered at autopsy, 2 were early collections of pus beneath the diaphragm incidental to postoperative peritonitis (Cases 18 and 19), and 1 was operated on for a complicating intraperitoneal abscess (Case 14). In 1 case (Table 3, Case 13) catheter drainage of the pleura was done after an unsuspected subphrenic abscess had ruptured through the diaphragm, the patient died. One patient in the group was not seen during the acute phase of the disease. Ochsner and DeBakey<sup>9</sup> and also Hochberg<sup>19</sup>

have emphasized the great importance of draining subphrenic abscesses extraperitoneally and have pointed out the impressive reduction in mortality they observed after eliminating trans-serous routes of approach. In the personal series of Ochsner and DeBakey the mortality for transpleural drainage was 50 per cent, for transperitoneal, 42.8 per cent, and for extraserous, 10.8 per cent.

### Conclusion

Perirenal or subdiaphragmatic abscess should be suspected in all cases of protracted sepsis with fever and leukocytosis when there is an antecedent history of furuncles, superficial infection, or inflammatory lesions of the intra-abdominal or pelvic viscera. Early signs of localization are frequently vague, inconspicuous, and unconvincing. As the abscess develops, differential diagnosis becomes less difficult. The results of proper operative treatment are excellent. The mortality in late cases with complications is high.

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FIG 2 CASE 8. Pyeloureterogram illustrating displacement of the kidney downward and laterally by subdiaphragmatic abscess above.

acteristic of perinephritic infection, but it may vary from time to time in the same patient and may also be present in cases of subphrenic abscess. Tenderness in the costo-vertebral angle—a sign regarded by some authors as pathognomonic of perirenal abscess—was absent in 2 patients with this lesion and present in 3 of those with collections of pus beneath the diaphragm. Tenderness to deep palpation in the epigastrium or in the hypochondrium just below the costal margin is occasionally the only positive early local evidence of a subphrenic abscess. Deep discomfort may be elicited by heavy percussion over the lower thoracic wall, anteriorly and posteriorly, when a collection of pus lies either beneath the diaphragm or around the kidney.

Spasm of the muscles of the abdominal wall, flank, and paravertebral group is extremely variable and frequently absent.

Edema of the skin and subcutaneous tissues of the flank, the lumbar region, or the lower thoracic wall is observed occasionally and, when present, is indicative of underlying infection.<sup>10</sup>

Abnormal physical signs in the chest over

the base of the adjacent lung may lead to the erroneous diagnosis of intrathoracic rather than intra-abdominal disease. Dexter<sup>11</sup> has reported 6 cases of subphrenic abscess in all of which he found dullness, diminished breathing, and diminished or absent fremitus on the affected side, adventitious sounds pointing to involvement of the pleura or lung were noted in 5 of the 6 cases. Such abnormal findings are also not uncommon when a large abscess surrounds the upper pole of the kidney.

### Additional Diagnostic Data

*Clinicopathologic studies* are of no value in establishing a differential diagnosis between these two types of cases. The temperature and pulse rate are invariably elevated in both. The level of hemoglobin and the erythrocytic count frequently indicate some degree of secondary anemia. Leukocytosis of varying range is always present. Routine examination and culture of the urine are seldom of significance except as a differential aid in ruling out primary disease of the kidney.

*Roentgenologic examinations* occasionally afford useful diagnostic assistance. Spinal scoliosis, convex to the opposite side, and obliteration of the psoas shadow have been described by Beer<sup>12</sup> and Carty<sup>13</sup> as suggestive of perirenal abscess. These signs are frequently absent. Elevation and fixation of one side of the diaphragm, the presence of an underlying bubble of gas, and a fluid line that shifts with change in the position of the patient are regarded by Whipple,<sup>14</sup> LeWald,<sup>15</sup> O'Brien,<sup>16</sup> and McNamee<sup>17</sup> as important aids in the diagnosis of subphrenic infection.

However, in 1 case herein reported I removed 500 cc of pus from beneath a diaphragm that moved normally by fluoroscopic examination, and I have also seen elevation and fixation of the diaphragm in 1 patient with a large perirenal abscess. This same phenomenon has also been observed by Braasch.<sup>18</sup> It therefore seems wise to offer a word of caution about the significance of roentgenologic examinations; they may be extremely helpful but upon occasion may also be misleading and should be interpreted in the light of the previous history and positive physical signs.

*Special urologic procedures*, cystoscopy, ureteral catheterization, and retrograde or intravenous pyelograms are of value in differential diagnosis when inherent disease of the kidney is suspected, but they afford no assistance when the perinephritic abscess is primary or

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outside Gerota's fascia are paranephric or false perinephritic abscesses, whether subphrenic, along the psoas, or postperitoneal from appendicular phlegmon, etc. As Dr Powers has indicated, the usual etiologic factors are quite distinct. The perinephritic abscess arises first as a metastatic lesion—blood born from distant foci such as furunculosis, wound and bone infections, diseases of the upper part of the respiratory tract, second, by direct extension from a recent or chronically infected kidney. Rarely direct or lymphatic extension from appendiceal or other inflammatory areas may be causative. Subphrenic and other false perinephritic abscesses are due almost invariably to the direct or lymphatic extension of intra-abdominal, suppurative processes concerned with the appendix, stomach, duodenum, gallbladder, etc.

Most, if not all, perinephritic abscesses are secondary to renal involvement and to label them primary is somewhat confusing. Contrary to Dr Power's observations, in our acute cases due to staphylococcal organisms where it seemed feasible and safe to adequately explore the kidney, cortical abscesses of varying size and number were found in every instance. The symptoms and signs of subacute focal staphylococcal nephritis, cortical abscess, and perinephritic abscess parallel each other so closely that their differentiation is often impossible save as clinical improvement or operative intervention reveals the real condition. It seems to me that all three depend on the same hematogenous spread of pyogenic bacteria to the renal parenchyma. The severity of the resultant lesion depends on the local and general resistance.

As Dr Powers' cases show, simple incision and drainage usually completely cures this type of abscess, the exception being with the coincident fulminating pyemic kidney, such as was encountered in his 1 fatality.

In the more chronic forms, urinary tract infections of varying duration with pus in the urine and renal symptoms usually antedate the onset of the abscess. The primary kidney lesion may be a simple pyelonephritis, infection with stone, pyonephrosis, polycystic kidney disease, or tuberculosis, and the formation of an abscess constitutes an exacerbation of the primary disease. The exciting organisms are commonly of the colon group or mixed types rather than the pyogenic cocci as a result of the underlying renal damage. In these more chronic cases the mortality and morbidity are much greater than in those of the acute or subacute staphylococcal variety. In a considerable percentage of cases, primary nephrectomy is required. In others, a persistent sinus tract or progressive renal destruction makes secondary nephrectomy necessary.

The diagnosis of perinephritic abscess depends entirely on the history and physical findings, but positive x-ray findings may also be helpful. The classic symptoms of pain in the renal area,

accompanied by fever, malaise, leukocytosis, tenderness, varying muscular rigidity over the affected side, tenderness at the costovertebral angle, presence of fullness or an indistinct mass in the flank with x-ray findings of renal fixation, haziness in the kidney outline, obscuration of the edge of the psoas, together with curvation of the spine with the concavity toward the infected side, give a rather clear picture of the condition. In other instances the only symptoms may be those of prolonged sepsis and malaise with few localizing signs and no urinary symptoms. The differential diagnosis of subphrenic and perinephritic abscess may be difficult. The history and diagnostic signs of antecedent intra-abdominal disease, together with the x-ray findings outlined by Dr Powers, may give a clue to the pathology present. Although on three occasions I have mistaken subphrenic or psoas abscess for perinephritic suppuration, my experience with the former is somewhat limited. The majority of these patients are seen by general surgeons, the abscess often complicating previous abdominal surgery.

A recent complicating factor in the diagnosis of perirenal suppuration has been the use of sulfanilamide or related drugs for unexplained fevers without a clear diagnosis preceding the prescription. Recently the fever, localizing symptoms, and pain were alleviated in 1 patient by the use of neoprontosil and a second patient with sulfanilamide. The patients were allowed to leave the hospital with a diagnosis, respectively, of cholecystitis and gastrointestinal "flu." Both patients were readmitted subsequently after the lapse of several weeks with more certain signs and were operated upon for relief of staphylococcal abscess.

I have the x-ray findings in these 2 patients with some further cases where the x-ray was helpful.

*Case 1*—B R., a young woman, aged 24, was readmitted two weeks after a previous diagnosis of cholecystitis. The urine specimen from the right kidney showed a few scattered pus cells, and staphylococci were found in the smear. The films show obscuration of the right psoas edge with some incurvation of the spine toward the right, the pyelograms being unremarkable. Operative intervention revealed an abscess in the perinephric area associated with a cortical abscess occupying about one-quarter of the lower aspect of the cortex.

*Case 2*—D P., a child, aged 9, had an infected wound of the knee three months previously. The patient was admitted to the hospital where the septic course was interrupted by the use of neoprontosil. There was slight tenderness in the left costovertebral angle and anteriorly over the left kidney. No other physical signs were noticed except for some diarrhea and gastrointestinal upset. The intravenous pyelogram was not remarkable, although the terminal cycles were not well filled. The patient was discharged with a normal temperature, returning four weeks later when the flat film of the ab-

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## Discussion

Dr Leo E Gibson, *Syracuse, New York*—Dr Powers has presented two very interesting groups of cases. He has been fortunate in having the opportunity to study so large a series of subphrenic abscess. I should like to ask if, in his cases, the abscesses were found intraperitoneally as in the majority described by Ochsner.

In all the discussions of perirenal infection one is somewhat surprised at the variety of terminology and different views about its etiology. Symptoms indicating suppuration in or around the renal cortex denote to many only perinephritic abscess, regardless of the possible presence of renal carbuncle, multiple cortical abscesses, or perinephritic abscess. Pathology in these lesions is quite different. Likewise, some, and I think the majority, voice the conviction that perinephritic abscess is almost invariably the result of a blood-stream infection of the renal cortex resulting in a cortical abscess which, after all, may be of little significance but which breaks through the capsule of the kidney and produces a perinephritic abscess. There are others who agree with Vermooten that the abscess develops independently of any pathology in the kidney.

It is difficult to prove either contention. Exploration of a kidney through a perinephritic abscess is difficult and dangerous. Cortical abscesses readily heal after draining into the perirenal space. Any evidence of their presence is obscure. The majority of cases are diagnosed only after several weeks of illness, consisting usually of an unexplained pyrexia. If an early diagnosis could be made and a prompt exploration carried out, I think more evidence of subacute blood-stream infection of the kidney cortex would be found. The question appears to be of academic interest only, while the diagnosis and treatment are of first importance.

There is considerable discussion in regard to the diagnostic value of the various clinical signs and symptoms exhibited by these lesions. No generally accepted solution has been arrived at regarding these factors.

Regardless of the confusion in the diagnosis and the vagaries in the clinical picture, a diagnosis of perirenal infection can be more accurately made if we have the luck to think of it. Certain factors are then searched for and usually found. A complete history is of the greatest importance.

In a series of 20 cases recently studied, 14, or over 65 per cent, presented a history of peripheral infection such as infected wounds, osteomyelitis, furunculosis, either by itself or complicating diabetes, paronychia, and acute infections of the upper part of the respiratory tract. These focal infections may occur five to twelve

weeks preceding the onset of symptoms referable to the kidney lesion. Lesions of this type may entirely heal and be forgotten by the patient. Only careful questioning will bring them to light. Two cases were operated upon, and a cortical abscess was discovered which I am sure would have drained into the perirenal space. Four cases revealed definite deformity in the retrograde pyelogram caused by large cortical abscesses. In 2 cases there was a remission of all the symptoms, during which time the patient appeared entirely recovered and refused surgery. Later, a perinephritic abscess developed. I think cortical abscesses were present which drained into the perirenal space, temporarily relieving the pain and tenderness that returned on development of the perinephritic abscess. In 10 cases the psoas muscle shadow was definitely obliterated, and in practically all of the cases scoliosis was present to some degree. One case had been confined in a sanatorium as tubercular, due to the mimicry, by the abscess, of the lesion of the lung. One case had a fixation of the thigh due to reflex contraction of the psoas muscle. In the majority of the cases a few pus cells were found in the urine, and in about 50 per cent of the cases staphylococci were recovered on culture of the urine. Fixation of the kidney or reduction of function, as may be shown in the intravenous pyelogram, was of no material aid in the diagnosis of these cases. In 1 case the abscess was massive and surrounded the upper pole of the kidney, but it was not considered a subphrenic abscess. In considering subphrenic abscess as being located intraperitoneally or immediately beneath the diaphragm and above the liver in the majority of cases, the provisional diagnosis of such a lesion offered no confusion in this series.

The studies of Ochsner and others revealed that 85 per cent of subphrenic abscesses are complications of intra-abdominal suppurated processes and that 50 per cent of those occurring are secondary to operative lesions of the appendix. This history is as important as that of peripheral infection preceding subacute blood-stream infection of the cortex of the kidney. The history of intra-abdominal lesions in so large a percentage of subphrenic abscesses apparently places its treatment in the realm of abdominal surgery rather than urology.

The diagnosis of these lesions is interesting, but it is evident that it depends upon a correlation of all the factors in the case at hand. There is no definite pathognomonic symptom.

Dr L. B. Kingery, *New York City*—It has been a great pleasure to hear the interesting and instructive paper presented by Dr Powers. It seems logical to limit the term "perinephritic abscess" to pus accumulated within the loose, areolar tissue surrounding the kidney and enclosed by Gerota's fascia (the true perinephrium). Other accumulations near the kidney but

# ERUPTIONS OF PREGNANCY

MAURICE J. COSTELLO, M D, New York City

THE pregnant woman is subject to all the dermatoses that occur in the nonpregnant woman. However, a woman is more likely to suffer from certain eruptions due to the physiologic burden of gestation. These dermatoses have been ascribed to diminished hormonal activity or excessive stimulation of the endocrines. Several dermatoses occur almost exclusively in the prepartum period. Chronic eruptions existing prior to pregnancy may be either ameliorated or aggravated during the time of gestation. Women who suffer from eruptions at the time of menstruation are more likely to develop skin diseases when pregnancy occurs. This is evidenced by the fact that herpes simplex, hyperpigmentation of the skin, pruritus, and urticaria are occasionally observed during both periods.<sup>1,2</sup>

The eruptions associated with pregnancy and the puerperium may be arbitrarily divided into those that are endocrine in nature, being due either to a diminution or to an increase in the anterior pituitary sex principle, and those that are toxic and neurogenic. Dermographia alba and rubra, generalized pruritus, urticaria, prurigo gestationis, herpes gestationis, impetigo herpetiformis, pruritus vulvae et ani, fibroma molluscum gravidarum (papilloma colli) are the cutaneous manifestations that are probably of endocrine causation.

Pigmentary changes during gestation are also due to an endocrine derangement. These include physiologic hyperpigmentation of the genitals, the umbilicus, the face (chloasma), the linea nigra, and the secondary areolas of the breasts. Depigmentation, as guttate leukoderma and vitiligo, are rarely seen.

Edema, flushing, hyperhidrosis, hypertrichiasis, palmar and plantar telangiectasia, subcutaneous hemangio-endotheliomas, erythema multiforme, and changes in the appendages (hair and nails) may be due to disturbances of the vascular mechanism. This may be caused by toxic or endocrine excitation of the vegetative nervous system.

Chronic proliferative gingivitis, purpura, and other eruptions to which a vitamin deficiency contributes will be discussed later.

Generalized urticarial cutaneous manifestations are not rare in the latter part of

the antepartum period. Dermographia alba and rubra were observed in about 75 per cent of the pregnant women examined by Seitz.<sup>1</sup> The normal vasomotor mechanism of the cutaneous vessels is disturbed. Sergeant thinks that dermatographic alba is caused by an inadequate supply of epinephrine, which renders the vessels of the skin more permeable.<sup>1</sup> The escape of serum probably explains the elastic puffiness of the features of many pregnant women.

Pruritus that occurs in the latter half of gestation is probably the most frequent cutaneous affection of pregnancy. It is often generalized, although it may be localized to certain areas—as the vulval and anal regions. Oftentimes there are no objective symptoms in either type. Occasionally, the linear parallel excoriations are severe enough to suggest pediculosis corporis. In the localized type especially, the urine and blood should be examined for sugar to rule out diabetes mellitus. Since varicose veins are occasionally the indirect cause of pruritus vulvae, they should be considered as one of the many etiologic possibilities.<sup>3</sup> Anogenital pruritus may be associated with vaginitis, edema of the vulva, and leukorrheal discharge. Examination for the *Trichomonas vaginalis* is important. Bland found this parasite in 7 per cent of 300 pregnant women examined.<sup>4</sup> *Trichomonas vaginitis* may be accompanied by intertriginous eczema resulting from leukorrheal discharge and scratching. These inflamed parts may harbor virulent organisms and be the cause of puerperal infection.<sup>5</sup> Pruritus vulvae et ani may be mycotic in origin, being caused by the *Monilia albicans* or other yeastlike organisms and the *Epidermophyton*. Burning sensations and itching are common symptoms of this infection. The anogenital areas present a moist erythematous eruption with demarcated borders made up of overhanging epidermis. The epidermis on the labia is thickened and grayish white. The monilia infection may be primary or secondary to infection of the vagina or intestinal tract. Tinea cruris caused by the *Epidermophyton inguinale*, although sharply demarcated and with an elevated border, is dry, scaly, and fissured.

Generalized pruritus and nonmycotic anogenital pruritus are explained on the endo-

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domen was taken. This shows the scoliosis of the spine, with the concavity toward the left side and some obscuration of the psoas edge compared with the right side despite the marked amount of gas present.

**Case 3**—J. R., a child, aged 8, gave a history of only two days pain in the upper right quadrant. On admission there was acute tenderness in the right upper quadrant and in the right side and a suggestion of fullness in this region. An intravenous pyelogram taken on the day of admission shows failure of the middle and minor calices to fill with little detail in this area. Three days later a flat film of the abdomen showed obliteration of the right psoas shadow, lumbar scoliosis with concavity toward the right, together with indefinite renal outline in the lower portion. Operation revealed a perinephric abscess with a small cortical abscess on the anterior surface, lower pole of the kidney.

**Case 4**—G. K., a woman, aged 20, was admitted complaining of dragging pain in the right loin of five weeks' duration. Several days prior to the onset she had had an abscess in the right buttock. She had been observed in another hospital for two weeks and discharged without a diagnosis. Physical examination showed tenderness in the right loin and costovertebral angle. Anteriorly, there was a movable, slightly tender mass the size of a grapefruit, apparently connected to the kidney. An intravenous pyelogram showed some obscuration of the edge of the psoas with no spinal curvature. A double kidney on the right side was seen, with a distinct circumscribed area of increased density surrounding the lower portion of the right kidney and having the appearance of an abscess. Operative intervention revealed a perinephric abscess with a small cortical lesion on the posterior lower pole of the kidney.

**Case 5**—J. N. The films serve to indicate the occurrence of a perinephric abscess extending from previously infected kidneys. The patient had polycystic kidney disease with double

pelvis on the left side. The first films show the clear outline of the enlarged kidneys, while the pyelogram indicates the irregularity in the uppermost calices and poor filling in the lower pelvis on the left side. Subsequent films showed obscuration of the left psoas edge with an indistinct outline of the upper pole of the kidney—the site of a perinephric abscess which was opened. The infecting organism was the *Bacillus aerogenes lactis*, the same as cultured from the urine. A few weeks later he developed symptoms of pain and tenderness on the right side. Films taken at this time showed obliteration of the right psoas edge with rounded area of increased density overlying the lower pole of the right kidney and obscuring its outline. This second abscess was drained, and the patient was discharged with wounds healed. In 1939, four years later after incision and drainage of these bilateral perinephric abscesses, the patient was readmitted with a painful swollen area in the upper portion of the left incision. The abscesses had recurred, and an irregular-shaped stone had developed in the upper part of the pelvis on the left side. At operation the perinephric abscess was incised and drained, and the calculus was removed by nephrostomy through the upper pole. The patient recovered and was discharged on the thirty-second postoperative day, with a small sinus still persisting in the upper portion of the incision. He was readmitted in April, 1939, with the sinus still draining and recurrent stone at the same site where the calculus had previously formed. He was discharged after a week of treatment in the hospital but was readmitted in October, 1939, with a recurrence of an extensive abscess in the same area about the upper pole of the left kidney. This patient serves as an extreme instance of the complications that may follow perinephric abscess when associated with seriously damaged and infected kidneys. It forms a striking contrast to the acute staphylococcal metastatic type where incision and drainage are followed by prompt cure and with no evident gross renal damage.

#### FOUR RELAPSES OF PNEUMONIA IN SAME PATIENT

The unusual occurrence of a patient suffering four relapses of pneumonia, due to four different types of pneumococci, all within a period of fifty days, is reported in the *Journal of the American Medical Association* for March 1 by Drs. Edward Bigg and Roger A. Harvey, Chicago, who state that recurrent attacks of pneumonia are extremely common but that a relapse is rare.

They define relapse as an affection of the same

or different lobe of a lung a few days after the original infection has subsided. In contrast to this, a recurrence can take place years after the first illness.

The authors stress the importance of repeated laboratory studies of the sputum for the identification of the pneumococci in possible cases of relapse so that appropriate serum and drug treatment can be given.

The Society for Psychotherapy and Psychopathology of New York has appointed a committee headed by Dr. Bernard Glueck to arrange for the publication of one or more of the books of the late Dr. Paul Schilder. Contributions to make such publications possible may be sent to the secretary of the committee, Frank J. Curran, M. D., 404 E. 55th Street, New York City.

They were discussing a certain undefeatable and irresistible politician. "Well," summed up the smoke room philosopher, "I'll tell you this about him. He might have typhoid, and recover, he might have pneumonia, and recover, he might have yellow fever, and recover, but—if he ever had lockjaw, by god, sir, he'd burst!"

—Medical Record



FIG 4. Herpes gestationis—generalized (courtesy of Dr. A. Rostenberg)

and extensor surfaces of the extremities become involved. Later the eruption may become generalized, affecting the face, back, and buttocks. As a rule there are no lesions of the mucous membranes. It is prone to recur in succeeding pregnancies. Some authors have reported recurrences only when the infant was a boy, which I believe was coincidental. The patient I presented before the Manhattan Dermatologic Society suffered from this eruption in her first and fourth pregnancies, and the infants were of opposite sex.<sup>9</sup> Several vesiculobullous lesions may be seen, rarely, in the infant.<sup>10</sup> Buschke in 1896 reported a case in which the infant presented pinhead to pea-sized vesicles. Miscarriages, stillbirths, and monstrosities have been reported. My patient gave birth to an anencephalic male infant with spina bifida in the second pregnancy in which the eruption occurred.

Ormsby obtained remarkable results by treating a pregnant woman suffering from this disease with intramuscular injections of 20 cc of another pregnant woman's blood serum at five-day intervals. Maier, Linser, and Heyman reported similar results.

Herpes gestationis is likely to occur earlier and to be of greater severity in succeeding pregnancies.<sup>11</sup> Weedman believes that it is due to toxins or ptomaines or is gonadotropic. The variation in the degree of pruritus may be due to a fluctuation in the gonadotropic principle, there being greater quantities in those with mild pruritus and less in those with severe itching. Eosinophilia ranging from 28 to 51 per cent has been reported in the acute phases of the vesicular eruption.

The prognosis in herpes gestationis is good.<sup>12</sup> Dühring said that herpes gestationis resembled dermatitis herpetiformis in every respect except the cause—pregnancy.

Gellhorn reported a death from peritonitis and sepsis in a pregnant woman four days after cesarean section was performed.<sup>13</sup> Since no vaginal examination had been made at



FIG 5. Proliferative Gingivitis of Pregnancy

any time prior to operation, he thought that the infection was due to the fact that the incision had been made through the diseased skin.

Impetigo herpethiformis is rare in the United States. The eruption consists of pinhead to lentil-sized vesicopustules, which in the beginning are discrete but soon coalesce to form oozing, crusted, foul-smelling lesions, surrounded by a zone of dull erythema. The lesions thus formed spread peripherally by the formation of new pustules, leaving reddened shiny apparently healed areas. In the genitocrural regions large, denuded, crusted, soggy, erythematous lesions are encountered.<sup>14</sup> In the beginning it involves especially the lower part of the trunk and the lower extremities. It finally becomes generalized.

Severe constitutional symptoms accompany this dermatosis. There are fever, rapid pulse, vomiting, diarrhea, arthritic pains, and great prostration. Anorexia, severe pruritus, and insomnia lead to rapid loss of strength and weight. Unlike the other pruriginous dermatoses, lesions of the mucous membranes are present, especially in the mouth cavity. They consist of grayish white plaques bordered by detached necrotic mucous membrane. They are painful and interfere with mastication and deglutition. The dermatosis at this point resembles the later stages of chronic pemphigus vulgaris. Spontaneous abortion has been followed by recovery. Bacteriologic examination of the blood and of the pustules fail to show a causative organism.

The exact cause of impetigo herpethiformis is unknown. It may be due to a toxemia or to an infection. Wolff-Eisner advanced the theory of a foreign protein reaction, anaphylactic in nature, finding its origin in the uterus



FIG 1



FIG 2



FIG 3

FIG 1 Herpes gestationis—occurring in first and fourth pregnancies

FIG 2 Erythema palmare appearing on the sides and dorsal surfaces of the last phalanx.

FIG 3 Erythema palmare showing macular areas of telangiectasia (courtesy of Drs Becker and Obermayer)

crime or neurogenic basis, especially when they disappear after parturition and recur with subsequent pregnancies. These patients are more likely to be of nervous temperament.

A definite dermatologic entity, known as prurigo gestationis of Besnier<sup>6</sup> occurring in the latter months of pregnancy, is seldom mentioned in the literature. This is probably because it lost its identity when it was included in the group of other pruriginous dermatoses peculiar to pregnancy. This dermatosis occurs in healthy pregnant women, and it consists of discrete pinhead to lentil-sized, severely scratched papules with adherent blood crusts. The lesions occur fairly close together, depending upon the duration and severity of the eruption. It is characteristically confined to the extensor surfaces of the arms, forearms, dorsums of the hands, thighs, legs, and dorsums of the feet. In severe cases the eruption may involve the shoulders, scapular regions, and the chest. Its onset is gradual, and as a rule it persists until the end of pregnancy, when it promptly disappears, leaving small pigmentations at the sites of the former lesions. In a number of cases it recurs with each pregnancy. Unlike the

other pruriginous dermatoses of the child-bearing period, the patient receives considerable relief from antipruritics, such as 10 per cent oil of cade in cold cream. It is my impression that about 2 per cent of the antepartum patients at Misericordia Hospital develop this eruption. There is great constancy in regard to the location, the similarity, and the time of occurrence of this eruption. Vesicles and bullas are never seen clinically in this dermatosis, which differentiates it from the vesiculobullous dermatoses about to be described. In many ways the eruption resembles prurigo mitis of childhood. Twenty cubic centimeters of the blood serum of a healthy pregnant woman administered every day for three days has been of benefit probably because of its estrin content.

Herpes gestationis, an extremely pruritic dermatosis which was first described by Milton<sup>7</sup> and later by Duhring,<sup>8</sup> occurs at any time during pregnancy but usually after the fifth month or during the early postpartum period. This eruption consists of grouped vesicles and bullas on an erythematous base. These lesions first appear in the umbilical region, accompanied by burning and itching. The groins, sides of the abdomen, breasts,

pituitary may be responsible for this condition. Changes in the cutaneous appendages have been observed. Chargin reported onycholysis.<sup>21</sup> Subungual keratosis and other onychodystrophies have been reported in successive pregnancies. Diffuse thinning of the hair of the scalp is seen more frequently than alopecia areata. The linear striae of pregnancy frequently observed must be explained by stretching and increased tension of the skin of the abdomen, buttocks, and thighs, due to increase in the panniculus adiposus. The elastic fibers of the corium are ruptured.

Half the pregnant women develop edema. There is a type peculiar to pregnancy which does not pit on pressure and causes thickening of the features. This differs from the edema following toxemia, cardiac insufficiency, nephritis, or hepatic disease, all of which pit on pressure. The latter type of edema is common in the morning when the patient rises. It frequently affects the feet, hands, and eyelids. It becomes reduced during the day as the circulation improves. It is caused by exudation of serum into the tissues, due to pathologic changes in the blood and capillaries.

The edema that becomes worse during the day is explained on a mechanical basis. It follows pressure of the fetus on the large veins on the extremities preventing normal venous return. Edema accompanied by hypertension is ominous.

Becker and Obernayer reported a patient suffering from erythema of the palms as part of generalized telangiectasia occurring during pregnancy.<sup>22</sup> It appeared in the fourth month of her third pregnancy. There were a number of telangiectatic areas from 5 to 10 mm in diameter resembling spider nevi scattered over the face, chest, and arms. Three weeks after delivery the palmar redness faded and the telangiectatic lesions disappeared.

Feldman presented a pregnant woman with a similar eruption affecting the palms and soles.<sup>23</sup> The eruption occurred in three of her four pregnancies, the issues of these pregnancies died of hemorrhages of the newborn. Postmortem investigation revealed hemorrhages in the brain, kidneys, and spleen.

The lesions occurred on the thenar and hypothenar eminences of the palms. These areas were studded with vermilion-colored macules measuring 2 mm in diameter. There was no pain or itching. The eruption did not appear in the pregnancy, which resulted in a healthy infant.

Davis<sup>24</sup> states that the occurrence of subcutaneous hemaugo-endotheliomas during the latter half of gestation is not an uncommon finding. They may appear for the first time during pregnancy, or there may be a rapid increase in the size of pre-existing lesions. They are most commonly seen on the middle vertical third of the face (usually around the eyes) and occur less frequently on the breasts and umbilical regions. They are single, rarely multiple, vascular, pigmented, warty growths, from pinhead to pea-sized, which are freely movable upon the underlying tissues. There is an associated hyperpigmentation occurring elsewhere, and there is nevoid dilatation of the surrounding veins. These lesions gradually regress after parturition and may be repeated in subsequent pregnancies.

In the great majority of cases, histologic examination is that of a simple nevus, unless malignant changes occur. Davis was able to collect 11 cases from the antepartum clinics in a period of two years. Three of these cases were considered malignant because of their rapid growth and wide infiltration. It is not infrequent for new and previously existing tumors to increase in size during pregnancy.

Condylomas acuminatum (venereal warts) are by no means observed only in pregnant women. Verrucae present at the onset of pregnancy may increase in size and number. They may not appear until the middle months of gestation, at which time they may increase until the masses become plum-sized, obscuring the labia and fourchet. They may cause difficulty at the time of delivery, increasing the danger of infection.

Proliferative gingivitis of pregnancy was described by Wetzel<sup>5</sup> and by Monash.<sup>25</sup> There is a proliferation of the interdental gum tissue, which forms dark red, vegetative-like protuberances. There is evidence of poor dental care. The condition progresses during pregnancy, undergoes involution at its termination, and recurs in subsequent pregnancies. Varying degrees of this condition are observed in 50 per cent of all pregnant women. There is sponginess and bleeding of the gums with occasional loss of teeth. There is no pain, though mastication may be difficult. The possible causes are altered buccal secretions, altered metabolism, toxemia, and lack of calcium or vitamin C.

Improvement has been observed in several cutaneous disorders during pregnancy. Psoriasis is a notable example. Petri<sup>26</sup> observed a patient in whom psoriasis cleared up in



FIG 6

FIG 7

FIG 6 Prurigo gestationis.

FIG 7 Mucous patches, moist papules of secondary syphilis

Mayer thought it resulted from a toxemia and that the organism did not react adequately with sufficient antitoxin. Dühring believed that both impetigo herpetiformis of Hebra and herpes gestationis of Authors should be placed under dermatitis herpetiformis, both being varieties of the one pathologic process.<sup>15</sup> Because of the occasional manifestation of convulsions, the endocrine theory of causation has its advocates. They believe that the source of the trouble is the parathyroid glands. The maternal mortality is between 70 and 80 per cent. Mayer obtained cures in several cases by the injection of 20 cc of blood serum of a healthy pregnant woman in an attempt to supply the antitoxin.<sup>16</sup>

Like the aforementioned dermatoses, erythema multiforme gestationis may occur at any time during pregnancy or the postpartum period, disappear after delivery, and recur with subsequent pregnancies.<sup>17</sup> The eruption is preceded by intense burning and itching and elevation of temperature. The early lesions are pale erythematous patches, which soon show urticaria-like changes. They become bright red, varying in size and shape and coalescing in some places. There is a predilection for the extensor surfaces of the extremities. Lesions of the mucous membranes may be present. Ashton L. Welsh,<sup>18</sup> in discussing a case of Madden's before the Minnesota Dermatologic Society, stated that in these cases he had been able to isolate a streptococcus from the nasopharynx of the type he had previously isolated from non-pregnant patients suffering with erythema multiforme. It is differentiated from gestational pemphigus, which it resembles in the early stages, by the fact that salt retention was demonstrable in the latter condition but not in erythema multiforme.<sup>1</sup> It may be

caused by a toxemia of pregnancy as reported by Kaiser.

Brickner described a disease that is seldom included in the dermatoses of pregnancy, he named it fibroma molluscum gravidarum.<sup>19</sup> It might better have been called papilloma coli, because the lesions are seen most frequently on the sides and front of the neck. It also occurs on the breasts and inframammary regions. The lesions appear in the latter half of pregnancy, gradually increase in size, and undergo involution after delivery. From a clinical, histologic, and endocrinologic point of view they are analogous to the cutaneous tags described by Templeton<sup>20</sup> (which occur during the menopause). They are pin-head to half-pea-sized, flesh-colored, or pigmented excrescences. One of the gonadotropic hormones is an ectodermal stimulant. In pregnancy and the menopause, in which these cutaneous tags occur, certain hormones exist in the urine which are common to the two conditions. Aschheim recently stated that certain identical ovarian follicular reactions take place in experimental animals after the injection of the urine of pregnant women and women who have reached the menopause. They are soft fibromas. There is no clinical evidence that they are warts. There is no thickening or hypertrophy of the horny layer on histologic examination.

Hyperpigmentation is seen during pregnancy and is progressive, occurring in typical locations. The cause of these deposits of melanin is unknown. It has been ascribed to slow circulation in the capillaries, hypertrophy of the adrenal glands, increase in the melanophore cells and stimulation by hormones from the hypophysis cerebri, lack of vitamin F, and abnormal iron metabolism.<sup>4</sup> Zondek thinks that the adrenals or mid-

Prurigo gestationis (Besnier) occurring in the last trimester has been admirably described by our essayist, and, despite the fact that he states its incidence is about 2 per cent at Misericordia Hospital, I personally do not recall ever observing this entity until the above-named caption.

From a historical point of view it was quite interesting to read a book published by Max Joseph in 1895 in reference to impetigo herpetiformis. It was first described by Ferdinand Hebra of the Viennese School in 1872 with due emphasis that the primary lesion was a pustule. A few years later Kaposi from the same school made additional observations. Occasionally, the lesions become papillomatous and so suggestive of pemphigus vegetans. Dr Costello describes the condition quite clearly but thinks that the primary lesions are either vesicles or bullas. I am inclined to believe that they are always pustules and appear in crops. It is noteworthy that cases of impetigo herpetiformis were reported by du Mesnil and Marc in nonpregnant women. Likewise, Kaposi and Patsky reported cases in the man. Neumann named the disease, owing to the presence of primary pustules, herpes pyaemicus and states that clinical examination revealed peritonitis, as well as perianal and parametritis.

It is natural to infer, as Dr Costello states, that the etiologic factor is either an infection or a virulent toxemia. From a clinical standpoint we have three different dermatoses—namely, prurigo gestationis (Besnier), herpes gestationis, and impetigo herpetiformis—presenting, as primary lesions, a papule, vesicle or bulla, and a pustule, respectively.

Possibly the most distressing eruption of this particular group is a generalized urticaria, and, not unlike a similar condition in the nonpregnant, this eruption is quite resistant to therapy. The intravenous injection of 10 cc of a 10 per cent solution of strontium bromide may afford some relief. Personally I have not used torantal, fearing nausea and possibly emesis.

In conclusion, manifestations arising from the invasion of the Trichomonas vaginalis, the pruritus vulvae et ani induced by the Monilia albicans or other yeast organisms, and tinea cruris induced by the epidermophyton inguinale do not belong, I believe, to this category. All were probably existent prior to gestation, and I admit that with the advent of additional vaginal discharge and edema of the genitalia a better medium was obtained, and so a better growth ensued. Finally, I believe Dr Costello is to be congratulated upon this unique presentation. He has utilized in its compilation quite an extensive bibliography and at the same time has contributed much of his own personal efforts.

Dr Henry D Niles, *New York City*—One feature that especially interested me in Dr

Costello's excellent and instructive paper was his discussion of the soft fibromas that are seen on the neck of pregnant women. I was not well acquainted with this condition until a few years ago when a patient who was about four months' pregnant consulted me about these lesions on her neck. She said that her obstetrician had told her that they were common in pregnancy.

I do not believe that the average dermatologist is aware of the frequency of these lesions during pregnancy and at the menopause. I have treated three or four patients with this condition by dailyunctions of a cream containing estrogenic hormone. This treatment was suggested to me by an internist and, so far, my results have been satisfactory.

I was also especially interested in Dr Costello's paper because of a patient whom I have been treating in the last few weeks. When I first saw her she was in her sixth month of pregnancy and presented a widespread eruption of erythema multiforme with typical bullous and iris lesions. Later the appearance of the eruption changed completely and resembled a dermatitis venenata with many small papules and vesicles over the entire body except the face. Her discomfort and itching became so intense that she was hospitalized, and the pregnancy was terminated at about eight and one-half months. Immediately after evacuation of the uterus, the eruption greatly improved and the itching became much less severe, but a few days after this she developed new pemphigus-like lesions, consisting of large bullas arising from the normal skin on the flexor surfaces of her upper arms, neck, and lips. She had 57 per cent eosinophiles, which is higher than any of the figures which Dr Costello mentioned. The multiformity of lesions and the variation in the clinical picture at different times in this case are characteristic of eruptions occurring during, and immediately after, pregnancy.

Dr Timothy J Riordan, *New York City*—Out of the many skin conditions observed in pregnancy, three are particularly associated with this condition. Of these, the outstanding one is herpes gestationis. This vesicobullous condition presents a real problem to the dermatologist, the obstetrician, and the patient because of the severe itching. I believe it aids the patient's mental reaction by reassuring her that the symptoms and the condition will subside when the pregnancy is terminated. It can also be stated that occasionally one severe attack may follow soon after delivery. I have collected about 8 cases in my experience, and it is worth noting that in these the itching was relieved best by the use of sulfur combined with balsam of Peru about 5 to 10 per cent buffered with prepared chalk and soft soap. This is also the formula that is used in the treatment of scabies.

each of her five pregnancies Spitzer<sup>26</sup> made a similar observation, the patient having a recurrence between each of her nine pregnancies. Levy and Franke have observed cases where psoriasis occurred for the first time during pregnancy. Eczema may appear only during gestation, or a previously existing eczema may be aggravated at that time.<sup>27</sup> I have observed eczema of the nipples and areolas of the breasts in the antepartum period and during lactation. The condition is frequently aggravated by nursing, at times requiring the removal of the infant from the breast. Acne may improve or appear for the first time during gestation. Cutaneous tuberculosis is often aggravated during gestation, and there is a dearth of syphilitic eruptions during the childbearing period. Pregnancy has a salutary effect on maternal syphilis, often suppressing or ameliorating its cutaneous manifestations.<sup>28</sup>

The eruptions of pregnancy just described are capricious in regard to time, duration, recurrence, and severity. They are multi-form in character, polymorphous in type, acute in onset, and in many instances decidedly inflammatory, as evidenced by erythema, vesiculation, and bullous formation. There are all gradations of the eruptions of pregnancy, from generalized pruritus to the acute fulminating vesiculopustular dermatosis, impetigo herpetiformis, which usually terminates in death.

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## Discussion

Dr. Mark Heiman, *Syracuse, New York*—The primary effort of Dr. Costello in presenting this paper is to group the eruptions of pregnancy (although they represent nearly twenty dermatoses) into a separate classification. Whether we should consider them all as being truly pathologic or due merely to overburdened physiology is problematic. Their recession or disappearance at delivery or a short period following the same bespeaks of either hypo- or hyperendocrinal activity and either pituitary, adrenal, ovarian, or thyroid and still must be considered physiologic.

We, as dermatologists, with few exceptions have no difficulty in diagnosing these dermatoses clinically. However, our efforts to relieve these women from their symptomatology is not so readily attained.

Naturally, one cannot discuss this paper in detail, and because our essayist has so credibly described these dermatoses I have no additional comment to offer. However, I desire to add to the group, lichen planus. I have observed it several times during the latter months of pregnancy, but more often several months after delivery, usually in a primipara. As its etiology is still uncertain, possibly we might add it to the neurogenic classification.

For the sake of argument I wish to supplement this particular group with an additional entity—namely, pityriasis rosea. I have observed it several times during pregnancy, and it usually appears during the second trimester of gestation. While I cannot definitely substantiate its appearance or state with exactness its role in relationship to this particular group, still I desire to make it.

I have seen psoriasis aggravated during pregnancy, and then again I have observed its retrogression, finally appearing after delivery, and then a subsidence with following pregnancies.

I believe herpes gestationis to be dermatitis herpetiformis (Duhring) and have observed it only recently during a fourth pregnancy with a definite history of its presence during the three prior gestations—no dermal lesions in the interim, except possibly grouped pigmented areas, which gradually disappeared.

HEREDITARY LYMPHEDEMA (MILROY-METGE)  
ASSOCIATED WITH PTOSIS OF THE EYELID

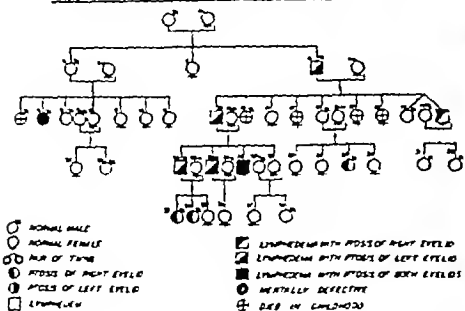


FIG 1 Family Tree

eight years following the development of the edema the patient had recurrent attacks of inflammation of both legs which started with pain in the groin and were associated with high fever and chills, confining him for several days to bed. These acute attacks, which were diagnosed by his physician as erysipelas, occurred twice or three times a year and had ceased entirely fifteen years ago.

Further questioning revealed that other members of his family were affected with a much more considerable edema of one or both extremities and that all of them also had ptosis of one or both upper eyelids. The affected members were his younger brother (No 24), one of his sisters (No 25), his father (No 12), one of his paternal aunts (No 20), and his paternal grandfather (No 4).

The patient is married and has 3 children—2 boys, aged 10 and 7 years, and a girl, aged 19 months. Both boys show ptosis of the right upper eyelid but no swelling of the extremities (Nos 33 and 34), while the girl has not yet shown any abnormality.

**Examination.** Heart and lungs were normal. The blood pressure was 120 diastolic by 80 systolic. Examination of the urine gave negative results. The Wassermann reaction of the blood had been found negative two years and one year previously. The basal metabolic rate was -6 per cent. Examination of the blood on January 23, 1940, showed 97 per cent hemoglobin, 5,200,000 red cells, 9,500 white cells, and 240,000 platelets. The color index was 0.96 per cent. The differential count showed 2 per cent eosinophiles, 9 per cent stab, 44 per cent segment, 20.5 per cent small lymphocytes, 1.5 per cent large lymphocytes, 4.5 per cent monocytes, and 18.5 per cent young lymphocytes. Because of the high count of young lymphocytes and leukocytes, the blood count was repeated on February 29, 1940, which showed a still higher leukocyte count of 14,300 but only 9.5 per cent young lymphocytes. This marked leukocytosis and the differential count indicated an infectious reaction.



FIG 2 CASE 1 Ptosis of the left eyelid



FIG 3 CASE 1 Edema of the ankles

Careful examination revealed normal fundi, normal corneal reflexes, and prompt reaction of both pupils to light and accommodation. The left pupil was slightly irregular and the left upper eyelid was ptosed, covering almost one-half of the cornea. There was a slight facial weakness on the left side, especially on smiling. All other cranial nerves were normal.

The motor power of the upper and lower extremities was well preserved. The tendon reflexes were present and equal. There were no pyramidal or cerebellar symptoms. The abdominal reflexes were equal and only the cremasteric reflexes could not be produced. There were no sensory disturbances of any kind. The gait was normal. Thus, except for the irregularity of the left pupil and ptosis of the left upper eyelid, the neurologic findings were practically normal.

An intracutaneous trichophytin test was per-

# HEREDITARY LYMPHEDEMA (NONNE-MILROY-MEIGE)

## Report of a Family with Hereditary Lymphedema Associated with Ptosis of the Eyelid in Several Generations

DAVID BLOOM, M D , New York City

THE purpose of this paper is to report a family in which members of several generations were affected with chronic lymphedema of the lower extremities in association with ptosis of one or both upper eyelids. I discovered the lymphedema accidentally in the original patient when he consulted me for recurrent furunculosis. His rather remarkable cooperation made it possible for me to examine personally all the affected and several of the nonaffected members of the family.

Although this type of lymphedema offers many points of scientific interest worthy of discussion, I will limit this report to a description of the family and to a discussion of some points that are of importance in regard to the pathogenesis of this abnormality.

### Terminology

If there is any justification for attaching names of investigators to disease terms the name of Nonne should be added to that of Milroy and Meige, for Nonne<sup>1</sup> was the first to report a family with this type of edema in 1891, while Milroy<sup>2</sup> published his report in 1892, and Meige<sup>3</sup> in 1899. Nonne used the term "congenital hereditary elephantiasis," and since then this term has been frequently employed in the German literature. Sinte Milroy, an Omaha physician, has published his report in the *NEW YORK STATE JOURNAL OF MEDICINE*, hereditary edema has been known as "Milroy's disease." In France the term "trophoedème de Meige" is being used, for this author introduced the term trophoedema because he assumed that changes in trophic centers of the spinal cord were the cause. However, this nervous theory is not yet definitely proved, although its correctness seems to be indicated by some facts. I, therefore, prefer not to use the term trophoedema, which anticipates definitely the pathologic nature of the process. The term elephantiasis is not correct, since the fibrosis which is present in many cases is secondary due to accumulation of lymph fluid, which is known to stimulate fibroblastic growth. In

other cases, probably, the fibrosis is also the result of recurrent attacks of inflammation due to infection with the streptococcus.

Although in all the 8 affected members of the family described by Nonne and in 20 out of 22 members of the family reported by Milroy the edema appeared at, or soon after, birth, in the cases of Meige and in most of the reports published later the abnormality was noticed in childhood and in later life, but mostly in the second decade. The term "congenital" is, therefore, to be discarded in the designation of the anomaly.

### Report of a Family (See Family Tree, Fig 1)

*Case 1 (No 25) \**—A C, a white man, aged 39, born of Russian-Jewish parents, came to see me in September, 1939, complaining of recurrent furunculosis. He seemed otherwise to be in good general health. He was an electrician by occupation and attended to his work without any difficulty.

On examination, two abnormal features were noted—namely, ptosis of the left upper eyelid which covered almost the upper half of the cornea (Fig 2) and a considerable padlike thickening of the ankles of both feet (Fig 3). This swelling felt soft and left slight pitting on pressure. The legs up to the knee were only slightly edematous. The feet and toes looked thickened, and the dorsum of the toes, particularly of the large and second toes, showed verrucose formation. There was maceration of the webs of the toes, which were close together because of their increased thickness. Both legs and feet showed moderately large varicose veins. Over the sacral region there was a tuft of hair.

Questioning elicited the fact that the ptosis had been present since infancy and that the swelling of his ankles and legs had started at the age of 16. Within a few years following its appearance, the edema gradually increased to a certain size, thus has persisted since then without any further change in extent or intensity. While the edema of the legs used to disappear following rest in bed, the edema of the ankles receded only slightly. The patient had been wearing elastic bandages which helped him to go about his work without any discomfort and kept the swelling of his legs from becoming larger. For about

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left upper eyelid showed ptosis but to a lesser degree than that of Case 1

Six years ago, following an acute inflammatory attack of his legs, he was confined for about two weeks at Mount Sinai Hospital. At that time the usual laboratory examinations had been performed. A blood Wassermann test gave a negative reaction, and a complete blood count was normal. Urine examination and a kidney function test suggested moderate renal insufficiency. A roentgenogram of the legs did not reveal any abnormality of the bones. A Kondeleone operation was considered at that time but was not carried out because of the recent flare-up of the lymphangitis. Attention was then called to the condition of his toes which suggested dermatophytosis and which the attending surgeon thought may give rise to repeated inflammatory attacks.

Because of the spina bifida occulta found in his brother, a roentgenogram of his lower spine was taken. This, however, did not reveal any abnormality of the vertebral column.

The patient is married and has an infant, a few months old, whom I examined and found normal. The father, however, stated that on several occasions he had noticed ptosis of the left eyelid.

**Case 3 (No 25)**—M W, aged 31, a sister of the above 2 men, showed moderate edema of both legs and ankles and ptosis of both upper eyelids. Her history revealed that the swelling started on the left ankle at the age of 13 and gradually extended to the present size. She has never had any febrile inflammatory attacks of her legs. Rest in bed made her edema disappear entirely, but several hours after being on her feet the edema reappeared. She stated that ptosis of both eyelids was present at birth and was so marked that at the age of 6 months she had to undergo an operation at Mount Sinai Hospital. The patient is married but has avoided having children in order to spare them the mental suffering she had undergone during childhood because of her ptosis, she had been constantly teased by her playmates because of her Mongolian appearance due to the narrow lid opening.

**Case 4 (No 12)**—L. C., the father, aged 58, showed the same degree of involvement of both lower extremities as Case 2 and also had ptosis of the left eyelid. At the age of about 15 he had developed inflammation of the left leg, associated with high fever, which was followed by enlargement of the leg. Half a year later the right leg became inflamed and was followed by enlargement of this leg also. These acute attacks recurred first every four to five weeks, then at greater intervals up to the age of 20, at which time they ceased to appear. The enlargement of the extremities developed gradually, and it took a few years until it reached a size that has remained unchanged until the present time. Rest in bed diminished the swelling considerably. He is forced to wear elastic bandages, otherwise the swelling would become enormous.

**Case 5 (No 20)**—B A, a sister of Case 4, is the twin sister of a normal brother (No 19), aged 39. She was examined by me at the Kings County Hospital where she was confined to bed with an advanced carcinoma of the rectum. Because of her condition, no detailed history could be obtained. It is almost certain, however, that her lymphedema had been present since her early teens. Examination revealed that the left lower extremity was markedly thicker than the right and that there was a pad-like swelling over the left ankle. The right lid opening appeared smaller than the left. Her 2 sons, aged 6 and 4, are said to be free of any abnormality. The patient died one month later at her home. Permission for an autopsy was denied.

**Case 6 (No 4)**—W C, aged 80, the grandfather of our original case, showed ptosis of the left upper eyelid and enlargement of the left leg up to the knee that was cylinder-like in shape. The dorsum of the toes showed verrucose formation. The right leg, which was much thinner, had marked varicosities. This man was intelligent enough to be trustworthy concerning his statement that his ancestors, as far as they were known to him, had normal eyes and extremities and that he was the first in three generations to exhibit the abnormalities. The edema of his leg had developed at the age of 13 following an attack of inflammation. This attack was associated with inguinal adenopathy and pain in the left groin and confined him to bed for seven weeks. The second attack resembling the first one took place ten years later. He had had five attacks altogether. Because a rather marked ptosis of the left upper eyelid became increasingly worse, he had to be operated upon a few years ago at the Brooklyn Eye and Ear Hospital. For the past thirty years he has worn elastic bandages which make it easier for him to walk around.

**Case 7 (No 29)**—M C, aged 18, first cousin of the original case, shows moderate ptosis of the right upper eyelid as the only abnormality.

Of the other members of the family No 5 was subject to epileptiform attacks and died at the age of 3, No 6 was mentally defective and died at the age of 24 of unknown cause, No 13 died one day after birth, No 15 and No 17 died at the age of eight months of unknown cause, and No 18 was stillborn.

Nine other members of the family, Nos 30 to 38, range in age from a few months to 14 years and, therefore, are still below the age of manifestation as far as the lymphedema is concerned. Two of them, Nos 33 and 34, sons of our original case, show ptosis of the right eyelid.

### Summary of the Clinical Findings

Of the family members affected with lymphedema, there were 4 men and 2 women. In 1, the edema involved the left leg, in an-

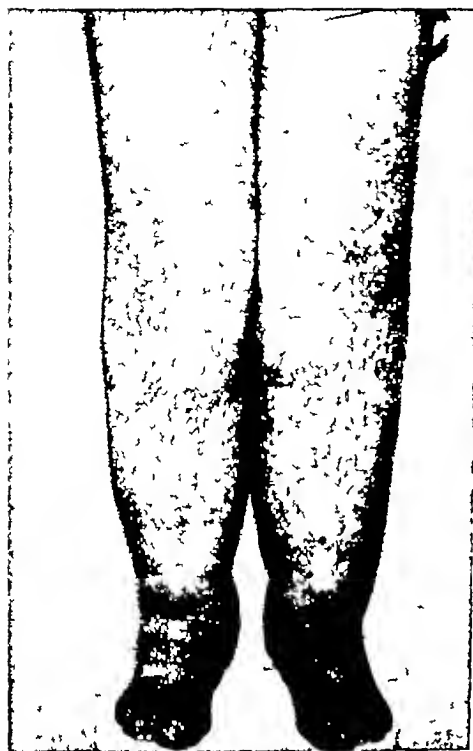


FIG 4.

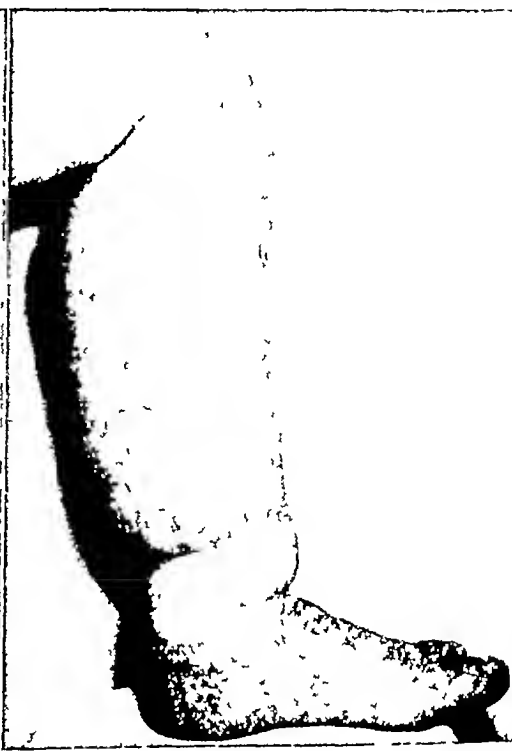


FIG 5

FIGS 4 and 5 CASE 2 Enlargement of the feet, legs, and thighs

formed on the leg and arm. The area of injection on the leg became pruritic four hours after the test. After twenty-four and forty-eight hours both areas showed equal strongly positive reactions.

A roentgenogram of the spinal column revealed spina bifida occulta in the region of the first sacral vertebra.

**Course** While under my care for furunculosis, he developed on the dorsum and inner side of both large toes, more over the left, an ulceration that resisted any treatment. The patient informed me that this ulceration had recurred twice a year for the past ten years and had cleared up only following several days, complete rest in bed. The correctness of this statement was, indeed, confirmed by healing of the lesion after the patient was confined to bed for several days.

**Case 2 (No 24)** \*—O C, aged 28, the brother of Case 1, was also in good general health and attended, without any difficulty, his occupation as electrician. From him I obtained the following history. At the age of 12 he developed inflammation of the right leg which was associated with chills and high fever and was followed

by persistent swelling of this leg. A few years later the swelling of the left leg developed in the same way. Since then, both legs and thighs have been considerably enlarged. By rest in bed they diminished only slightly in size. These attacks of inflammation of both lower extremities, which lasted from two to twelve hours, have been recurring once or twice a year. Like his brother he applied bandages to his legs. This enabled him to go about his work without discomfort. Without the bandages the legs become much more swollen and cause discomfort.

Examination of the patient showed a much more marked involvement of both lower extremities in extent and intensity than that of his brother (Figs 4 and 5). Both ankles were considerably thickened, felt fairly soft on pressure, and did not leave any pitting. There was a deep crease anteriorly and posteriorly, separating the leg from the foot. Both legs and thighs up to the upper third were considerably enlarged and cylindrical in shape. Their consistency was firm. On the right leg and on the left ankle there were scars, the results of incisions of abscesses that had developed during attacks of lymphangitis. The feet and toes were also thickened, and some of the toes showed, on the dorsal aspect, verrucose formation. The

\* Presented at the Manhattan Dermatological Society, November, 1939.

defective person and 1 epileptic member among a family of such size

### Discussion of the Genetic Mechanism

The type of persistent edema of the extremities as observed in all the affected individuals of the family described is to be included in the group of primary noninflammatory edemas, the so-called "hereditary lymphedema," which is associated mostly with the names of Milroy and Meige. The particular significance of this family is the association of lymphedema with ptosis of the eyelid in several members of four generations. In studying the literature I found two reports that suggest, possibly, a similar combination. In 1 of the 8 affected members of the family reported by McGuire and Zeek<sup>3</sup> there was noticed a slight oculomotor weakness on one side with concentric limitation of the visual fields. In an isolated case of hemihypertrophy of the body reported by André,<sup>13</sup> which possibly belongs in our group of cases, one eye had a smaller lid opening than the other. Except for these two reports, I have not found such an association in the literature.

When we start the count from the generation in which the lymphedema became manifest and omit any member below the age of 16, which is the end of the manifestation period for this anomaly in this family, we have 23 blood relatives included in the survey count. Of these, 6 are affected with lymphedema and 17 are free. Of course the ratio between the trait-carriers and the normal is not yet final, for 14 descendants have not reached the manifestation period—5 because of death in infancy and early childhood and 9 because of being below the age of 16.

The lymphedema occurred in three consecutive generations and the ptosis in four. One of those affected with ptosis (No. 29) has only a grandparent with the same condition, while his father (No. 16) is phenotypically free of the anomaly. In this family the lymphedema and the ptosis both follow the dominant mode of mendelian inheritance. This corresponds to the family reports in the literature on lymphedema (Bullock,<sup>14</sup> Cockayne<sup>15</sup>) and on ptosis (Passow<sup>16</sup>).

### Conclusion

This family, which shows the unique association of lymphedema of the lower extremities with ptosis of the eyelid, permits no other conclusion concerning the pathogenetic mechanism involved except that both

conditions follow the same mode of mendelian inheritance. In view of the absence of a report in the literature on such an association in about 20 families with lymphedema with more than 100 affected members, and, on the other hand, in view of the fact that in the many cases of ptosis reported in the literature the presence of lymphedema is not mentioned, this association in our family must be considered coincidental.

With regard to the hereditary mechanism of lymphedema itself, it must be assumed, from the analysis of our family which corresponds in the essential features with about twenty other families recorded in the literature, that lymphedema is hereditary and follows the mode of single dominance. The expressivity of the anomaly may be regular or irregular.

However, there is no satisfactory information available as yet about the different types of noninflammatory edema reported in the literature, all of which seem to belong in one group in which the cases described in this report also belong. These cases differ in many ways. Some show the anomaly at birth—others, later in life. Some seem to follow an injury, others appear spontaneously. Some show the edema not in the usual location—namely, on the lower extremities—but on the upper extremities or on the face. Last but not least, there are numerous isolated cases without any accumulation of the anomaly in the family. What is the relationship between all these different varieties of lymphedema? Have they a common, uniform, pathogenic mechanism?

With regard to the isolated cases one may be inclined to consider them as a separate nonhereditary group. However, this classification may be wrong, for first, we do not know whether or not the families of the isolated cases have been adequately investigated, second, isolated cases do not exclude heredity, for the trait may be latent in several generations (this would mean, genetically, that the expressivity of this particular trait is limited and perhaps dependent on the presence or absence of other genetic factors), last, it must be considered that a new genetic condition may arise by mutation.

A definite clarification of this genetic problem is possible only with an accurate family investigation of a large unselected group of such cases or by the study of an unselected series of twins. The methods of such investigation have recently been demonstrated by Kallmann<sup>17</sup> in psychiatry.

other, the whole left lower extremity, in 2, both lower extremities, and in 2 others, both ankles. In 2, the lymphedema had become elephantastic. One showed marked varicosities on the leg that was free of lymphedema, and another had moderately large varicosities of both legs and feet. The age at which the abnormality manifested itself varied between 12 and 16. A history of acute lymphangitis attacks was obtained in 4, while 1 had no such attacks. In the sixth case no detailed history could be obtained. Three members stated that the attacks developed first and the swelling of the legs followed, while 1 stated that the edema appeared first and the attacks later. Of the 6 individuals affected with lymphedema, 3 had ptosis of the left upper eyelid, 1, of both upper eyelids, and 1, of the right upper eyelid. Of the 3 other cases that were free of lymphedema but had ptosis of the right upper eyelid, 1 boy was 18 years old and the 2 other boys were 10 and 7, respectively. In all cases the ptosis was noticed at, or soon after, birth. In 2 the ptosis was so pronounced that operation had to be performed.

General neurologic and laboratory examinations of the original patient revealed, besides the lymphedema, ptosis, and leukocytosis, nothing essentially abnormal. Examination for spina bifida occulta was possible in this case and in his brother, and it was found only in the original patient. One of the affected members died of cancer of the rectum. One nonaffected member was a mental defective, and 1 child who died at the age of three was subject to epileptiform attacks.

### Discussion of Some of the Clinical Findings

Of the different clinical features, the recurrent inflammatory attacks of the affected extremities are of interest. There is frequent mention in the literature of these erysipelas-like attacks in the course of hereditary lymphedema. Hope and French<sup>4</sup> report a family of five generations, 13 members of which had lymphedema, and most of them were subject to recurrent attacks of lymphangitis. These attacks have been so frequently reported that there are some authors who consider these as the cause of the edema. This conception, however, is not borne out by the facts, for in many cases, as in the members of the family reported by Milroy and in the family reported by Rolleston,<sup>5</sup> the attacks were absent, and in many others they start long after the swelling has been present. Of

the 15 affected members of the family reported by Brandt,<sup>6</sup> only 5 had recurrent acute attacks. In these, the swelling developed first and the attacks followed later. In my report 3 family members stated that the attacks appeared first followed by persistent swelling, and one stated that the attacks followed later.

One member denied having had any attacks at all. The cause of these attacks may be assumed to be due to infection with the streptococcus. For the accumulated lymph fluid in the tissues offers the streptococcus a good medium for growth. The point of entrance of these organisms are the toes, which, being thickened, lie close together and favor dermatophytosis and injury to the skin. I have not been able to investigate whether these recurrent attacks are due to the streptococcus or, as Sulzberger<sup>7</sup> suggests, to the fungus itself, for I had no occasion to observe my cases during the attacks. However, the finding of the hemolytic streptococcus in the tissue removed by McGuire and Zeek<sup>8</sup> during an attack and the fact that most of the cases of erysipelas-like attacks secondary to epidermophytosis observed by Lowenberg<sup>9</sup> responded almost specifically to streptococcus antisera speak in favor of the contention that the recurrent attacks are produced by the streptococcus.

The frequent association of spina bifida occulta with so-called hereditary lymphedema has been considered by some as a point in favor of the nervous theory in regard to the pathologic nature of lymphedema. Jaroschy,<sup>10</sup> Lévi,<sup>11</sup> and others consider this association as not coincidental. However, in view of the great frequency of spina bifida occulta in normal people, no deduction whatsoever can be made from the presence of this anomaly in one of the affected members of the family. The fact that the brother of this patient had no anomaly of the spinal column, although he had much more pronounced lymphedema, favors this attitude.

The presence of a mentally defective member in the family who died at the age of 24 and of a child with epileptiform attacks who died at the age of 3 is to be mentioned as a matter of record, but no conclusion is to be drawn in spite of the significance that has been frequently attributed to the presence of epilepsy and mental disorders in such families (Hope and French<sup>4</sup> and Weber<sup>12</sup>). The percentage of mentally defective and epileptic individuals in the general population is considerable enough to disregard the presence of 1 mentally

conception As to the cause of ptosis of the eyelid, there may be involvement of the oculomotor nerve, the levator palpebrae muscle, or the nucleus of the oculomotorius nerve But I have not read of any involvement of the lymphatics

producing ptosis I am afraid the discussor has put up an improbable hypothesis which fits in with his belief that the pathologic lesion of hereditary lymphedema consists in an abnormal weakness of the lymphatics

### PRESCRIPTION FOR A HEALTH INSURANCE PLAN

The Medical Society of the County of New York, at its meeting on January 27, adopted a resolution defining what a health insurance plan should and should not be, offered by a special committee The resolution ran, as reported in the *New York Medical Week*.

"Resolved, That neither this Society nor any of its officers, as such, shall, by resolution or action, encourage or publicly approve any experiment or plan connected with the provision of medical service, if such experiment or plan is inconsistent with the following principles, viz

"1 Participation by the physician shall not impose or promote violation of the Code of Ethics of the American Medical Association by him

"2 Participation of the physician shall not impose or promote conduct on the part of such physician in violation of the Rules of Professional Conduct of the Medical Society of the State of New York.

"3 The experiment or plan shall operate under the provisions of Article IX-C of the Insurance Law and be subject to the supervision of the Superintendent of Insurance

"4 No experiment or plan shall be approved which by precedent might lead to the creation of commercialized competition, including solicitation of patronage with the inducements of price-cutting, or the lowering of standards of medical practice—all conditions which must lead to demoralization and ultimately to governmental control of the medical profession.

"5 No experiment or plan shall be approved which does not afford equality of opportunity and reward to all physicians in good professional standing living or practicing in the territory or community of such experiment or plan.

"Your Committee has been constantly mindful of the fact that we represent the entire membership of the Medical Society of the County of New York and, properly, have had every member's interest at heart We are, therefore, unwilling to recommend any plan which will permit any person, group or combination of groups of physicians to function in the care of patients to their own advantage and to the disadvantage of other members of this Society

"It is the opinion of this Committee that a Medical Expense Indemnity plan should be approved at this time On the other hand, it is suggested that the Medical Society of the County of New York would not object or wish to interfere with a reasonable proposal for a complete health service and medical care coverage if it adheres to the following general principles

"A Proof of integrity of management.

"B Adequate recompense to the physician in proportion to the social and economic status of the participants involved.

"C Ability of the plan to implement a rational health conservation and preventive medicine program.

"Motion to table this report was lost.

"Motion to accept this report and adopt its resolution was passed "

### "THE FOUNDATION PRIZE"—AMERICAN ASSOCIATION OF OBSTETRICIANS, GYNECOLOGISTS AND ABDOMINAL SURGEONS

(1) The award which shall be known as "The Foundation Prize" shall consist of \$150

(2) Eligible contestants shall include only (a) interns, residents, or graduate students in Obstetrics, Gynecology, or Abdominal Surgery, and (b) physicians (with an M D degree) who are actively practicing or teaching Obstetrics, Gynecology, or Abdominal surgery

(3) Manuscripts must be presented under a nom de plume, which shall in no way indicate the author's identity, to the Secretary of the Association de plume and containing a card showing the name and address of the contestant

(4) Manuscripts must be limited to 5,000 words, and must be typewritten in double-spacing on one side of the sheet. Ample margins should be provided. Illustrations should be limited to such as are required for a clear exposition of the thesis

(5) The successful thesis shall become the property of the Association, but this provision shall in no way interfere with publication of the

communication in the journal of the Author's choice. Unsuccessful contributions will be returned promptly to their authors

(6) Three copies of all manuscripts and illustrations entered in a given year must be in the hands of the Secretary before June 1

(7) The award will be made at the Annual Meetings of the Association, at which time the successful contestant must appear in person to present his contribution as a part of the regular scientific program, in conformity with the rules of the Association The successful contestant must meet all expenses incident to this presentation

(8) The President of the Association shall annually appoint a Committee on Award, which, under its own regulations, shall determine the successful contestant and shall inform the Secretary of his name and address at least two weeks before the annual meeting

—JAS R. BLOSS, M D, Secretary  
418 Eleventh Street,  
Huntington, West Virginia

But genetic studies do not invalidate the necessity of a thorough investigation of the individual cases. As to hereditary lymphedema, there is insufficient knowledge in regard to the anatomicopathologic condition of the nervous system. Therefore, in order to clarify the actual pathogenetic mechanism of the group of lymphedema, which is called hereditary, careful pathologic studies of the nervous system are necessary in addition to detailed and accurate genetic investigation.

## Summary

1 A family of 37 members in four generations was reported in detail, 6 of which were affected with hereditary lymphedema in association with ptosis of one or both eyelids, and 3 with ptosis only.

2 The occurrence of inflammatory attacks, the association with spina bifida occulta, and the presence of mental deficiency and epilepsy in such families were discussed.

3 The genetic mechanism was discussed.

4 The association of lymphedema with ptosis does not permit any conclusion with regard to the pathogenetic mechanism involved.

5 Attention was called to the different types of cases of primary noninflammatory lymphedema which require elucidation with regard to their relation to each other and to a possibly uniform pathogenetic mechanism.

6 In addition to detailed and accurate genetic investigation, careful pathologic studies of the nervous system are necessary.

135 East 50th Street

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## Discussion

Dr William Director, New York City—This is an interesting group of cases since the association of hereditary lymphedema and ptosis of the eyelids has not yet, to my knowledge, been reported. This disease is classified by Cockayne as congenital and of late onset. The first group is not preceded by inflammatory attacks, while, in the latter, onset occurs up to about 18 or 20 years and the swelling is often noted only after one or more attacks of lymphangitis. Dr Bloom's cases obviously belong in the late or inflammatory group, although 1 case had swelling without previous lymphangitis. In all the cases the ptosis occurred much earlier than the lymphedema of the legs.

Concerning the pathogenesis, it seems reasonable to assume that the basic fault is maldevelopment of the lymphatic tissue and that the difference between the congenital and late types is merely quantitative. In the congenital cases the swelling occurs early because there is marked disturbance of the lymphatic circulation of the lower extremities, while in the late cases the threshold is higher and swelling occurs only after infection and the ensuing lymphangitis, which break down the competence of the lymphatic vessels. Furthermore, the ptosis of the lids also may possibly be due to maldevelopment of the lymphatics of the upper lid. It is not quite clear from Dr Bloom's report whether the ptosis is due to real nerve (oculomotor) impairment or may only be apparent from swelling of the lid.

Genetically, I think it proper to count only the families deriving from the affected grandfather (No 4 of Fig 1). One should omit the 4 sibs who died in infancy and of whom little was known and the 2 children with ptosis (Nos 33 and 34) but not, as yet, lymphedema, and No 29 should be reckoned abnormal. There was also 1 normal male conductor (No 16). By this count there are 9 abnormal members, 1 normal conductor, and 12 normal members in the four generations well accounted for, thus giving a ratio of 10 abnormal to 12 normal. This is quite close to the expected 1:1 ratio for a simple dominant hereditary characteristic.

Dr David Bloom (Concluding Remarks)—If I would have read the paper in full, many of the remarks made by Dr Director would have been superfluous. Although there are some authors who explain the pathogenetic mechanism by the weakness of the lymphatics, there are many more who bring forth many reasons against this theory and favor the theory that the vasomotor nervous mechanism is disturbed. Many observations speak for the correctness of this latter

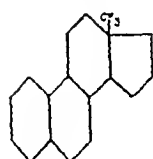


FIG 1 Estrane

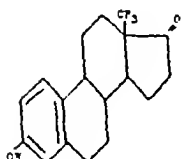


FIG 2 Estrone

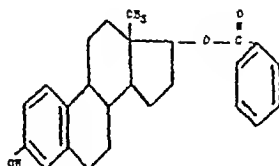


FIG 3 Estradiol benzoate

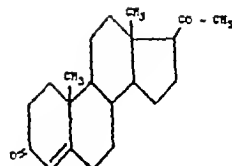


FIG 4 Progesterone

is so named because its biologic actions in rodents are similar to that of the gonadotropic hormones of the pituitary gland, though not exactly the same

## Estrogens

We will first consider the estrogenic commercial preparations. Four units are commonly used for their standardization: the international unit, the international benzoate unit, the rat unit, and the mouse unit. The most frequently used are the international unit, or I.U., and the international benzoate unit, or I.B.U. These are defined, respectively, as 0.1 microgram of a standard estrogenic substance, known as crystalline keto-hydroxy-estratriene or estrone, and as 0.1 microgram of a standard estrogenic substance, known as crystalline estradiol benzoate.

The essential nucleus of all the estrogens is estrane, and its formula is  $C_{15}H_{20}$  (see Fig. 1). The formula of keto-hydroxy-estratriene is shown in Fig. 2. The formula of estradiol benzoate is shown in Fig. 3.

From the above definitions we can readily see that the international unit and the international benzoate unit is applicable only to those estrogens whose formulas are, respectively, keto-hydroxy-estratriene and estradiol benzoate. For the standardization of the other products, the rat and mouse units are employed, which are commonly abbreviated as R.U. and M.U.

The rat unit is the minimum quantity of estrogenic substance necessary to produce vaginal signs of estrus within seventy-two hours in a castrated adult female rat when administered in three doses at four-hour intervals. The mouse unit utilizes castrated adult female mice and is the minimum quantity necessary to produce vaginal signs of estrus when administered in six doses within forty-eight hours.

To find a common ground for these four units, it should be remembered that the rat unit and the international benzoate unit are approximately equal. These units are equivalent to 5 international units. The potency of the mouse unit is somewhat more

disputed, but it is accepted as being equal to 1 international unit. With this knowledge we may go on to consider the various types of estrogens which are commonly used in the United States today. We have made no attempt to include all the products available but will list only those products that are commonly used and only those whose methods of standardization are acceptable.

Some of these estrogens are concentrated extracts of physiologic fluids and tissues, others are partially synthetically made. At present we have no definite proof of any differences in the qualitative, clinical action of these various products. The difference is quantitative, and, if the physician will be guided by his knowledge of the various units of standardization employed, he may safely choose that particular estrogen which may be secured at the lowest economic cost per unit.

I Estrone. Hydroxy-keto-estratriene. Obtained from the urine of pregnant mares and women. Available as the purified urinary extract and as an oily solution of the crystalline substance. The purified extracts contain small amounts of estril and estradiol. All products are in international units.

(A) Amniotin	Extract
(B) Estrogenic hormone	Extract
(C) Estrone	Crystalline
(D) Estrone	Crystalline
(E) Estromone	Extract
(F) Menformon	Extract
(G) Proliculin	Crystalline
(H) Theelin	Crystalline
(I) Thelestrin	Extract

II Estril. Trihydroxy-estratriene. Obtained from the urine of pregnant women.

(A) Estril	(mg.)
(B) Theelol	(mg.)

III Estradiol. Dihydroxy-estratriene. Obtained from the urine of pregnant mares as estrone and then reduced to the dihydroxy form.

(A) Dimenformon	(R.U.)
(B) Progynon DH	(R.U.)

IV Estradiol Benzoate. Obtained by the synthetic esterification of estradiol.

(A) Dimenformon benzoate	(R.U.)
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# POTENCY EVALUATIONS OF COMMERCIAL FEMALE HORMONE PREPARATIONS

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THE physician in general practice, in attempting to apply present-day knowledge of female hormone therapy, is often confused by the multitude of trade names applied to endocrine products\*. This confusion has resulted in a difficulty on his part in correlating the specific hormone with its popularized pseudonym.

The purpose of this paper is an attempt to alleviate this confusion by grouping the more commonly used female hormones according to their chemical nomenclature and comparing this with their commercial name. In addition, an attempt will be made to explain the methods of standardization used, so that the busy physician can, at a glance, realize what the potency of a given endocrine product is.

If various commercial preparations are, in spite of their different names, essentially the same substance and if their methods of standardization are comparable, the physician will then be able to choose for his patients that particular preparation which is economically the most desirable one.

The use of unstandardized extracts is highly undesirable. We are not concerned with the fact that a 5-grain tablet is obtained from 1 pound of glandular tissue. We do, however, want to know if the 5-grain tablet is active, relatively active, or inert. Such information cannot be evaluated unless the actual potency of the preparation is standardized, directly or indirectly, by biologic assay. Consequently, we shall only consider those preparations that meet this qualification and whose potency can be measured by an acceptable yardstick.

It is not within the scope of this paper to consider the rationale of the various therapeutic methods in vogue at the present time, but it is essential to outline briefly our conceptions of the physiology of the more commonly used hormones.

Man, from birth to death, is constantly under the influence of varying hormonal concentrations, but woman, from pubescence to climacteric, is subjected, in addition, to the rhythmic influence of sex hormones. In the

adult menstruating woman the average menstrual cycle is one of twenty-eight to thirty days. The first three to five days are those of actual menstruation, then, up to the phenomenon of ovulation which occurs from the twelfth to the sixteenth day, the endometrium of the uterus is in what is called the "proliferative stage", after ovulation, the endometrium progresses through the so-called "secretory stage," to end up in menstruation once again.

The key to these endometrial phases is resident in the ovaries. Once a month, one or more graafian follicles are brought to maturation with the release of an ovum on the twelfth to the sixteenth day of the menstrual cycle, with the resultant formation of a corpus luteum. The maturing graafian follicle secretes an increasingly large amount of the estrogenic hormone, and, with the appearance of the corpus luteum, a second hormone, progesterin, is produced.

The estrogenic hormone is presumed to control the proliferative stage of the endometrium of the uterus, while progesterin controls the development of the secretory phase.

These ovarian hormones are, in turn, directly subject to the gonadotropic hormones of the anterior pituitary gland. The gonadotropic hormones are usually designated as prolactin A and prolactin B. Prolactin A, the follicle-stimulating hormone, controls the production of estrin, and prolactin B, the luteinizing hormone, exercises a like function for progesterin.

This is the much simplified current explanation of the physiology of three of the more commonly used hormones—namely, estrin, progesterin, and the gonadotropic hormones of the anterior pituitary gland. It should be remembered that the anterior lobe of the pituitary gland produces many other types of hormones, but, since this paper concerns itself only with the more commonly used endocrine preparations and their standardization, we shall mention these other hormones only in passing.

A fourth commonly used hormone, the anterior pituitary-like hormone, commonly called A.P.L., must here be discussed. This hormone is almost certainly made by the placenta and is found as an excretion product in the urine and blood of the pregnant woman. It

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From the Endocrine Laboratories of the Beth Israel Hospital.

acquainted with the definition of a rat unit of that particular commercial house

As a general rule, all rat units consist of that amount, or fraction of that amount, of gonadotropic material which will produce an evidence of maturity when injected into immature female white rats. These evidences of maturity are quite varied. One group of firms chooses the appearance of vaginal or smear estrus as their criterion of maturity. Another group of drug houses uses the appearance of follicles and corpora lutea as the required evidence. A third group requires a specific increase of weight of the ovaries, while a fourth group demands a combination of several of the above criteria.

Since each of these evidences of maturity requires a different amount of chorionic gonadotropin to produce it, it is easy to understand why these chorionic gonadotropic rat units must necessarily differ. Furthermore, it should be remembered that the commonly used white laboratory rat will mature spontaneously at the age of 48 to 52 days. Consequently, if one drug house will decide to work with 22-day-old rats and another with 32-day-old rats, it may be assumed that it will require much less chorionic gonadotropic material to bring the older rat to maturity than will be required to produce the same maturity in a younger rat.

As all these variables are present in the standardization of the chorionic gonadotropic products, it is impossible to compare one rat unit to the other on terms of definition alone. To facilitate a comparison of these units so that the physician using these endocrine products may be certain of their potency, we have chosen a method of standardization which, in our hands, was the most delicate and practical to use. We then assayed all the commercial forms of the chorionic gonadotropin commonly used by this method, and, by arbitrarily designating our rat unit as unity, we are able to give a comparison of the commercial chorionic gonadotropic rat units, as their potency compares to our standard rat unit (see Table 1).

Since the completion of these experiments, the League of Nations Health Organization has set up an international unit for the chorionic gonadotropic substances. It is designated as 0.1 mg. of a standard preparation of chorionic gonadotropic material. This unit is supposed to produce the estrus type of vaginal smear in 21-day-old rats.

The adoption of the international unit in the standardization of the commercial chori-

TABLE 1

Endocrine Product	Relative Potency of Rat Unit
Antuitrin S	1.00
A. P. L.	0.33
Entromone	<0.10
Follutein	1.00
Korotoin*	0.50
Placestoin	<0.10
Pregnyl	1.00

\* Our assays revealed marked potency variations in individual ampules.

onic gonadotropic preparations will clear the existing confusion caused by the use of unequal rat units.

### Gonadotropic Hormones of the Anterior Pituitary Gland

The administration of the chorionic gonadotropins has produced ovulation in rodents, while the combined use of pituitary gonadotropic hormones and chorionic gonadotropic substances has accomplished this in *Macacus rhesus*.<sup>4</sup> But attempts to produce ovulation in woman have been signally unsuccessful by the use of these products either singly or in combination.<sup>5,6</sup>

However, successful production of ovulation in woman by the intravenous use of a gonadotropic substance obtained from the serum of pregnant mares has been reported. This product has only recently become available commercially.<sup>7</sup>

The gonadotropic hormones are obtained by extraction from the anterior pituitary gland and are standardized in rat units. These units vary greatly, since each commercial house defines them differently. They are all, with one exception, based upon the production of an increase in weight of the ovaries of the test animal.<sup>8</sup>

One of the typical units is defined as the smallest amount of material which, when divided into six equal parts and injected over a period of three days into immature female animals less than 30 days old and weighing from 35 to 40 Gm., will, on the fifth day, produce follicular maturation and luteinization of the ovaries and a marked increase in the size of the ovaries and uterus in at least 60 per cent of the animals so treated.

We obtained our preparations from reliable retail drug houses and proceeded to assay them in terms of the manufacturers' unit, using, however, 10 rat units in an attempt to produce the ovarian changes claimed for 1 rat unit.

There are five commercial preparations of the pituitary gonadotropic hormones. In

- (B) Ectofolliculina (I B U)  
 (C) Progynon B (R.U.)
- V Estradiol Propionate Obtained by the  
 synthetic esterification of estradiol  
 (A) Follacro (R U)

#### VI Emmenin

An extract of human placenta, which is orally active in rodents. Chemically, it is a combination of glucuronides of the estrogens, principally of estriol. It is assayed by oral administration to immature rats, consequently, its unit may not be compared to any of the other estrogenic units.

We have found all the estrone preparations to be uniformly potent. The minor variations we have encountered from time to time are probably due to differences in assay technique.

It should be noted that our list of the estrone products contains eight different names for nine preparations that are all essentially the same substance. One can readily understand the confusion that has resulted from this multiplicity of names. If the manufacturers would label these products estrone, followed by the firm name, this confusion would be avoided.

The estriol and estradiol preparations are intended for oral usage, yet, the manufacturers standardize them parenterally. It requires a greater amount of estrogen used orally to produce a given change than it does to produce this same change with the same estrogen used parenterally. All preparations that are intended for oral use should be standardized orally, but the only one that fulfills this essential requirement is emmenin. This product has not been assayed by us because of the technical difficulties inherent in a rodent feeding experiment.

The estradiol benzoate and estradiol propionate preparations were uniformly potent.

#### Progesterin

This hormone is standardized in three units. The most commonly used one is the international unit. An international unit is 1 mg of progesterone, which is crystalline progesterin of a standard quality. Its chemical formula is shown in Fig 4.

Another unit is the Corner-Allen rabbit unit. This is the minimum quantity of progesterin which, when divided into five equal daily doses, will produce in an adult rabbit a state of the uterine endometrium equal to that produced by an eight-day-old pregnancy.

The third unit is the Clauberg or European rabbit unit, which utilizes a smaller rabbit than does the Corner-Allen rabbit unit.

Again it is necessary to find a common meeting ground for these various units, so it should be remembered that an international unit is equal to a Corner-Allen rabbit unit. The potency of the European rabbit unit is much disputed, but it probably is equal to one-half the American or Corner-Allen rabbit unit.<sup>1</sup>

Progesterin is obtained in two ways at the present time. The original method is the extraction of the corpora lutea of the sow, the newer method is entirely a synthetic process. We choose to point out here, once more, that we are unable to demonstrate any practical differences in the products obtained by these different methods. We are concerned only with their relative potency. (I) Crinolutin—glandular extract, (II) Lipo-Lutin—extract, (III) Lutromone—glandular extract, (IV) Progesterin—synthetic, (V) Progesterin—glandular extract, (VI) Progesterin in Oil—extract, (VII) Progesterone—synthetic, and (VIII) Proluton—synthetic.

Here again, we have seven different names for eight products that are essentially the same substance. The progesterin preparations that we assayed, whether extracts or synthetic crystals in oil, were all found to be of labeled potency.

#### Chorionic Gonadotropins

The third endocrine product to be classified is the anterior pituitary-like hormone. The correct name is the chorionic gonadotropin of human pregnancy urine. Its qualities have already been described briefly. We merely wish to reiterate here that it is not the same substance as the gonadotropic hormone of the anterior pituitary gland and that in rodents<sup>2</sup> and monkeys<sup>3</sup> there is overwhelming evidence that their biologic actions are considerably different. The chorionic gonadotropin is secured from two sources from the urine of pregnant women and from the placenta, while the anterior pituitary gonadotropin is extracted from the gland itself. The exact chemical formulas are unknown.

There are seven commercial firms that manufacture the more commonly used chorionic gonadotropic products under various trade names. All these commercial chorionic gonadotropins are standardized in rat units, but each of the rat units used by the seven houses differs from the others. In other words, the phrase "rat unit" has no definite meaning when one discusses a chorionic gonadotropic product unless the speaker is

# THE CLINICAL APPLICATION OF SECRETIN IN THE STUDY OF PANCREATIC FUNCTION

JOSEPH S. DIAMOND, M.D., and SIGMUND A. SIEGEL, M.D., New York City

SINCE Baylis and Starling in 1902 discovered the presence of secretin in the small intestine and noted its specific effect upon the excretory cells of the pancreas, many attempts have been made to isolate this hormone in a pure form so that it might be utilized clinically in man. It was not until 1933, however, that Hammarsten<sup>1,2</sup> succeeded in preparing a pure crystalline salt of secretin. In 1937 Agren and Hammarsten<sup>3</sup> finally devised a more simplified method for the production of secretin, which made possible its use for general clinical purposes. Pharmacologically, it closely resembles the crystalline product. It is free from histamine and other undesirable products that made the use of the earlier preparations prohibitive. In our own experience of 116 tests carried out with secretin, many of which have been repeated, no untoward effects have ever been noted. An occasional transient flushing of the face may be seen. The product is also free from cholecystokinin, the gallbladder contracting principle.

The basic difficulties in the past in studying pancreatic function have been the lack of a standard stimulus to the pancreas and the difficulty in obtaining pure pancreatic juice uncontaminated with gastric chyme. In the previous work on the study of duodenal enzymes by McClure,<sup>4</sup> Christiansen,<sup>5</sup> Crohn,<sup>6</sup> and Myers,<sup>7</sup> stimuli were introduced in the form of food and chemicals, and various specimens were withdrawn and examined at different intervals. The admixture of the acid gastric chyme lowered the pH of the duodenal juices and gave no true indication of the bicarbonate concentration or the total enzyme output.

These difficulties have now been overcome by the use of secretin and a double gastroduodenal tube. Secretin supplies a strong pancreatic stimulus, and the double tube provides for the separate collection of the duodenal and gastric juices. We are thus enabled to obtain a clear, uncontaminated, pancreatic secretion. This method has made it possible for the first time to study clinically

the bicarbonate concentration of the pancreatic juice in man as obtained from the duodenum. The method also permits the collection of the entire pancreatic output during the test period for total quantitative determinations.

In a previous communication<sup>8</sup> we have described at length the procedure of the test. Briefly stated, the free end of the double tube is permitted under fluoroscopic guidance to enter the duodenum as far as the third portion, while the shorter end, attached 10 inches higher, remains in the stomach. Since engaged in this work we have been able to shorten considerably the period of duodenal intubation. Working under the fluoroscope with the patient in an erect posture, we can quickly correct kinking at the cardia and guide the tube to the pylorus. With manual pressure upward at the greater curvature and antrum the tube usually slips through the pylorus. Both ends of the tube are provided with many apertures. By means of a gentle suction not exceeding 50 mm. of mercury, both pancreatic and gastric secretions are obtained separately and completely.

After obtaining a basal flow during a period of twenty to twenty-five minutes, secretin is injected intravenously (0.75 mg. per kilogram of body weight). We have increased the submaximal dose of 0.5 mg. used in our earlier work to 0.75 mg. so as to subject the pancreas to a maximal stimulus. Within a minute or two following the injection there is an outpouring of pancreatic juice (Fig. 1) that quickly loses its bile discoloration and usually remains colorless throughout the greater period of the test. A deeply bile-stained secretion throughout the entire test period indicates a diseased and nonfunctioning gallbladder, whereas a clear opalescent juice indicates a normally functioning viscus, the bile entering the gallbladder and being stored there.<sup>9</sup> The secretion collected is rich in bicarbonate (Fig. 2) and enzymes (Fig. 3)—amylase, trypsin, and lipase.

## The Test

Following the injection of secretin, the test is carried out for one hour. The evaluation of pancreatic function following secretin depends upon the following factors: volume of

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From the Sydenham Hospital.

This work was aided by the Dr. Max Rosenthal Research Fund.

testing these preparations by the method previously outlined, we found that four of them were ineffectual. The fifth, the "Gonadotropic Factor of Ayerst," was effective only when ten times the stated amount of material was used, but, when the exact quantity as defined by their rat unit was employed, our results were negative. It should be noted at this point that the Ayerst unit is defined as one-tenth of that amount of material which, when administered daily in three divided doses, will cause a certain increase in the weight of the ovaries. This unit must, therefore, be regarded as exceedingly small.

Since we employed ten times the amount of material that the commercial houses utilized to produce a given result, it would appear that those products that in our hands did not produce any ovarian changes were impotent.

The available pituitary gonadotropic hormones are (1) ambinon, (2) gonadotropic factor, (3) gyantrin, (4) prephysin, and (5) prepituitary-G.

### Summary and Conclusions

An attempt has been made to enumerate and classify the more commonly used female hormones.

Whenever possible, the chemical structure, the accepted nomenclature and the commercial trade names have been designated.

The standardization of the products discussed has been explained, and, as far as possible, comparison of their potencies has been made.

The potency of the estrogenic preparations has been discussed. We feel that the estrone, estradiol benzoate, and estradiol propionate products are of labeled potency. The estrinol and estradiol products are standardized parenterally, although they are intended for oral usage.

All the progestin products we assayed were uniformly potent and well up to their labeled standard.

The rat unit of the commercial chorionic gonadotropins has been evaluated by a series of experiments.

The potency of the pituitary gonadotropic hormones has been assayed and found to be below the standard necessary for practical usage. Our assays indicate that the pituitary gonadotropic substances are inefficacious by the time they reach the dispensing physician. We do not feel that the use of these products, at least for the present, can be recommended for the production of ovulation in women.

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### ALUMNI DAY—LONG ISLAND COLLEGE OF MEDICINE

The Alumni Day of the Long Island College of Medicine will be celebrated on Saturday, April 26, 1941, at the Medical School. Round Table discussions between 10:00 and 11:00 A. M. will be given by the departments of anatomy, chemistry, obstetrics and gynecology, pathology, surgery, pediatrics, physiology, and radiology.

Beginning at 11:00 A. M. the alumni will be "welcomed" by Dr. Jean A. Curran, dean of the Medical School. Dr. William P. Healy will speak on "Pelvic Malignancies," and Dr. Frank E. A'dair, on "The Place of the Radiation Program in the Field of Mammary Carcinoma." Following luncheon in the main dining room of the hospital, Dr. Perry M. Lichtenstein will speak on "Psychopathic Criminals."

The annual banquet will take place at 7:30 P. M. at the Knights of Columbus Club, 1 Park West, Brooklyn, New York. The Honorable William O'Dwyer, District Attorney, Kings County, will be the speaker.

### A POLISH MEDICAL SCHOOL IN EDINBURGH

The University of Edinburgh has offered to the Polish Government facilities, which have been cordially accepted, for the establishment in Edinburgh of a Polish School of Medicine (*Brit M J*, Jan 25, 1941). It will be staffed by professors and teachers now serving with the Polish Army in Britain and by professors of the Edinburgh faculty of medicine in such basic subjects as may not be represented among the Polish professors. Discussions are in progress between representatives of the Polish Government and of the University of Edinburgh to settle details of the scheme. The University has gladly undertaken to provide accommodation and material to the utmost of its power, and the city authorities have informally indicated that they will co-operate in the provision of opportunities for clinical instruction. By establishing the nucleus of a Polish faculty of medicine in Edinburgh one of the most important branches of Polish learning—medical research and teaching—will be kept alive.

TABLE 1—PANCREATITIS SECRETIN TEST—EIGHTY MINUTES

Name	Diagnosis	Date	Weight, Kg	Volume		Bicar- bonate MEq	Enzymes (Units per Kg)			Duo- denal Icterus Index	Serum van den Bergh
				Total cc	Cc Kg		Amy- lase	Tryp- sin	Lipase		
M B	Acute hemorrhage	6/26/39	60	43.5	0.7	75	1.1	0.05	10.1	Puru	0.4
		9/27/39	60.9	104	1.7	62	1.16	0.24	128	75	0.4
		2/26/40	68.2	90	1.3	86	3.1	0.26	80	80	0.4
H. S.	Chronic pancreatitis		50.8	180	3.2	80	3.9	0.63	117	0	12
V L.	Edema pancreatitis		59	197	3.3	87	6.4	0.4	40	75	1.2

bicarbonate, 90 to 130 milliequivalent, amylase 300 to 1,200 units (5.5 to 11 units/kilogram/60 minutes), trypsin 20 to 40 units (0.35 to 0.7 unit/kilogram/60 minutes), and lipase 7,000 to 14,000 units (135 to 225 units/kilogram/60 minutes) (In the eighty-minute test period the standards are one-eighth higher for volume, one-fifth higher for the enzymes, bicarbonate remains unchanged.)

The present report consists of 116 secretin tests performed on 90 patients. In 19 cases the test was repeated from two to four times, in 12 cases, twice, in 5 cases, three times, in two cases, four times.

There were 24 normal individuals and 66 pathologic cases. The normals include students, physicians, and a number of patients with unrelated ailments such as constipation, hemorrhoids, sciatica, psychoneurosis.

With the exception of three instances in apparently normal students, the results of the tests were uniform in all, corresponding to the established normal standards. These 3 individuals gave surprisingly low figures for volume and enzymes. We have, nevertheless, included them in the normal group, although on closer questioning we obtained a history of a prolonged illness, with chronic diarrhea during childhood in one and, in the other two, previous histories of vague digestive disturbances.

### The Secretin Response in Pathologic Cases

In pathologic states, any of the functions above enumerated may be affected. The enzyme production is the first to suffer in the damaged pancreas. The volume of juice and the bicarbonate concentration are fairly constant and not easily disturbed, the bicarbonate least of all.

The enzymes also may become dissociated so that only one may be affected while the others remain normal. This is mostly observed in the milder states. The lipase and amylase are most frequently disturbed. In the severer states, such as pancreatitis with

necrosis, cirrhosis of the pancreas, or mechanical obstruction of the pancreatic duct, all functions are simultaneously involved.

The pathologic material subjected to the secretin test consists of the following 66 cases:

Pancreatitis	
Hemorrhagic pancreatitis with fat necrosis	1
Edema of the pancreas	1
Chronic pancreatitis	1
Obstructive jaundice	
Carcinoma of the head of the pancreas	3
Carcinoma of the biliary ducts	2
Atresia of the common duct	1
Cholelithiasis	14
Cysts of the pancreas	3
Cirrhosis of the liver with syphilis	3
Splenomegaly with syphilis	1
Toxic hepatitis (2 with syphilis)	5
Acute yellow atrophy of liver (syphilis)	1
Steatorrhea	14
Diabetes	3
Miscellaneous	13
Postcholecystectomies, colitis, spontaneous cholecystoduodenal fistula, chronic nephritis, etc.	

**Pancreatitis**—One case of hemorrhagic pancreatitis was examined seven weeks after the operation while still discharging from a cholecystostomy sinus. The findings indicated a marked deficiency in all the functions including volume, bicarbonate, and enzymes. Some of the enzymes were as low as one-eighth to one-fifteenth of the normal. The pancreatic juice was admixed with considerable pus. Subsequent examinations made four months and ten months later revealed considerable improvement in the function. The output, however, of the volume and enzymes still remained one-half of the normal.

The case of chronic pancreatitis presented several attacks of recurrent jaundice. Examination with secretin during one of these episodes revealed low bicarbonate, amylase, lipase, and also a high blood lipase.

The patient with edema of the pancreas, who had long-standing diabetes and cholelithiasis, presented a typical clinical picture of marked, left upper quadrant tenderness and high blood amylase and lipase. A secretin

EFFECT OF SECRETIN UPON  
VOLUME OF FLOW  
(AVERAGE OF NORMAL CASES)

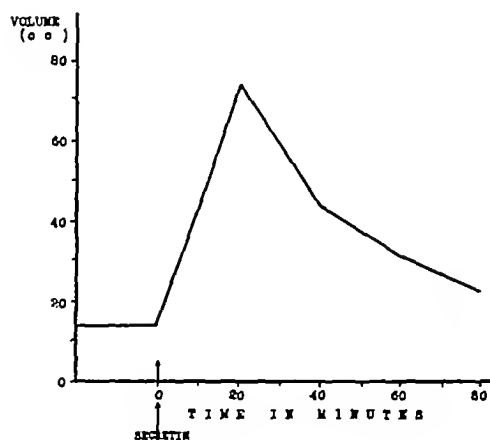


FIG 1

EFFECT OF SECRETIN UPON  
RATE OF FLOW  
AND  
BICARBONATE CONCENTRATION  
(AVERAGE OF NORMAL CASES)

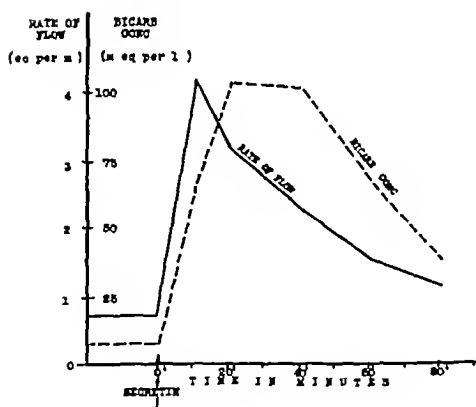


FIG 2

flow, concentration of bicarbonate, and concentration and total quantity of enzymes—amylase, trypsin, and lipase

A total secretion varying between 150 to 250 cc of juice is collected during one hour. The maximum flow takes place within the first ten minutes, gradually coming down and reaching the basal level in about eighty minutes.

The bicarbonate content is estimated by titration and is expressed in milliequivalents per liter. It reaches its maximum concentra-

EFFECT OF SECRETIN UPON  
CONCENTRATION OF ENZYMES  
(AVERAGE OF NORMAL CASES)

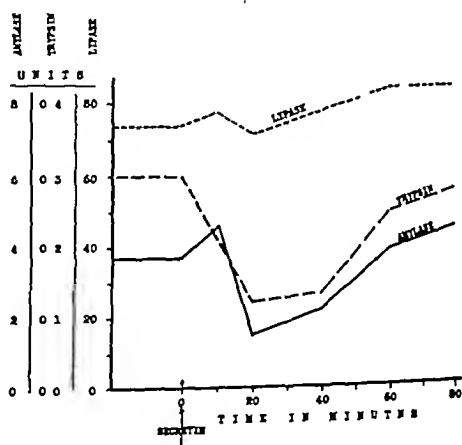


FIG 3

tion at the end of the twenty-minute period and varies between 96 and 120 milliequivalents.

The enzymes are quantitatively estimated using the following methods: for amylase—Norby's<sup>10</sup> method modified for duodenal contents, for trypsin—Willstätter's<sup>11</sup> method, for lipase—the method of Cherry and Crandall,<sup>12</sup> modified by Comfort and Osterberg,<sup>13</sup> using 1:10 dilution. The presence of bile does not affect enzyme activity.

For the evaluation of the function of the pancreas it is necessary to estimate the total output of the enzymes during the test period. This is obtained by multiplying the concentration by the total volume.

The total volume and total bicarbonate concentration are directly proportional to the amount of secretin used. The greater the dosage, the larger the volume and bicarbonate output. The behavior of the enzymes is different. The concentration is inversely proportional to the rate of flow. After a washing out of the preformed enzymes stored within the ducts and cells of the pancreas, the concentration falls to a lower level and remains fairly constant throughout the test, rising only toward the end when the volume is diminished. In the normal state the enzymes run parallel to one another (Fig 3).

In our previous report the duration of the test was eighty minutes. We have since reduced the test period to sixty minutes. The normal standards for the one-hour test period are as follows: volume, 135 to 250 cc (21 to 45 cc per kilogram/60 minutes),

these 2 instances with positive Wassermann, the pancreatic function was markedly disturbed, all enzymes being diminished. The third case was a milder form with negative serology, ascites, and a palpable spleen. This patient responded favorably to therapy, the ascites disappearing. The test here showed only diminished bicarbonate but no interference with the volume or enzyme output.

*Splenomegaly*—In 1 case of splenomegaly with syphilis and a secondary anemia, only the lipase was diminished. Otherwise the findings were normal.

*Toxic Hepatitis*—There were 5 cases in this group—2 complicated with syphilis. In these 2 instances the secretin test revealed marked disturbance in the pancreatic function with diminution of enzymes. In 1 of these cases the test was repeated four times, with similar findings even after the jaundice had cleared. In the other 3 cases the tests were normal, with the exception of 1 instance of a more severe type where the lipase was diminished.

*Acute Yellow Atrophy of the Liver*—There was 1 case of acute yellow atrophy of the liver. This patient came to the hospital with jaundice that had developed after neoarsphenamine treatment for syphilis. Symptoms were moderate at first, and the patient received the usual treatment with intensive glucose therapy and sodium thiosulfate. The secretin test was performed during this period. It revealed a marked deficiency, affecting all the functions—the volume, bicarbonate, and all the enzymes. The following day the patient became drowsy and listless. The cholesterol was low, the ester dropped to zero. The patient rapidly developed the typical clinical picture of acute yellow atrophy and succumbed five days later. The autopsy confirmed the clinical diagnosis. The pancreas revealed edema and slight fibrosis but no necrosis. Evidently the depressed function was due to the same toxin.

*Steatorrhea*—There were 14 cases of steatorrhea comprising 8 severe forms requiring hospitalization and 6 milder ambulatory types. All these patients were subjected to thorough clinical investigation, including quantitative fat studies in the stool, hematologic studies, blood chemistry, and roentgen studies of the gastrointestinal tract and bones. (A detailed study of this work will be reported subsequently.)

The clinical picture was that of sprue and they were so regarded. The severe forms presented frequent, large, bulky, fatty stools with marked nutritional disturbances, emaciation,

and anemia. The milder forms presented vague digestive symptoms and intermittent attacks of diarrhea, in these patients, however, the nutritional disturbances were not marked.

The secretin studies revealed the following. In 10 cases, including 6 severe types and 4 ambulatory, there were varying degrees of pancreatic deficiency involving particularly the lipase. In addition, 5 also showed low volumes, 1, low bicarbonate, 2, low amylase, 5, low trypsin. All 10 showed lipase deficiency. In the remaining 4 cases, 3 of which were severe forms and 1 ambulatory, the pancreatic function was entirely normal as to volume, bicarbonate, and all enzymes. In 5 instances the test was repeated from two to four times.

We feel that the 4 cases that showed normal pancreatic function can be regarded as cases of sprue or idiopathic steatorrhea, while the other cases that showed such profound lipase deficiencies may be regarded as steatorrhea associated with pancreatic lesions. In the severe cases that received active treatment with diet, transfusion, and liver therapy with the improvement of the patient, the pancreatic function also showed restoration to normal values. In this connection it may be stated that Andersen<sup>14</sup> has collected a group of 49 cases of cystic fibrosis of the pancreas with autopsy findings in whom the clinical picture during life was that of coeliac disease.

The similarity of the clinical picture in the steatorrheas makes the condition a difficult one for differential diagnosis, and the readiness with which one type can be mistaken for the other becomes obvious. In secretin we have a fairly simple procedure that provides a sharp line of differentiation between the cases of steatorrhea showing normal pancreatic function and those in which the pancreatic function is deficient.

*Diabetes*—There were 3 cases of diabetes. Two were associated with gallstones, and 1 entered the hospital with acute edema of the pancreas with high blood amylase and lipase. The secretin test was performed after clinical improvement when the diabetes was under full control with insulin and dietary regimen. The findings revealed in 1 case a low lipase and in the other 2 cases low bicarbonate. Two cases, in addition, had nonfunctioning gallbladders.

*Miscellaneous*—This group included 4 cases in whom cholecystectomy had been performed. All responded normally to the secretin test. One case of spontaneous cholecystoduodenal fistula showed a lowered bicarbonate but was

TABLE 2—OBSTRUCTIVE JAUNDICE DUE TO CARCINOMA SECRETIN TEST—EIGHTY MINUTES

Name	Diagnosis	Date	Weight, Kg	Volume		Bicar- bonate MEq	Enzymes (Units per Kg)			Du- odenal Intestine Index	Serum van den Bergh
				Total cc	Cc Kg		Amy- lase	Tryp- sin	Lipase		
A L	Carcinoma of the head of the pancreas	10/ 9/39	51.8	131	2.5	10	0	0	0	83	10.5
M G	Carcinoma of the head of the pancreas	10/25/39	68.2	132	1.95	114	7.3	0.12	20	35	18.4
R. P	Carcinoma of the head of the pancreas	11/ 1/39	66.4	190	2.8	108	9.4	0.34	120	2	13.8
O K.	Carcinoma of the head of the pancreas	12/21/38	52	17.5	0.3	26	0.25	0.05	23	110	9.2
		4/17/39	53	98	1.78	35.8	2.02	0.24	83	0	11.5
O K.	Carcinoma of the common duct	6/ 5/39	68.1	234	3.4	93	18	1.0	144	0	6.4
C T	Carcinoma of the hepatic duct	10/24/38	54.5	132	2.4	118	5.4	0.31	190	2	17.6
G T	Carcinoma of stomach with metastasis	10/ 6/38	71.0	66	0.92	59	10.1	0.2	43		

study three weeks afterward, when apparent clinical recovery had taken place, showed low bicarbonate and extremely low normal figures for amylase and trypsin (Table 1)

**Obstructive Jaundice**—This group includes 3 cases of carcinoma of the head of the pancreas, 2 cases of carcinoma of the biliary ducts, and 1 case of atresia of the common duct post-operatively. All of these cases were operated upon with the exception of 1 case of carcinoma of the head of the pancreas. One case of carcinoma of the head of the pancreas came to autopsy.

These 3 cases of carcinoma of the pancreas showed marked deficiency in the function of the pancreas. The tests were repeated twice. In 1 case all the enzymes were entirely absent and the bicarbonate output was as low as 10 milliequivalent per liter. In the second case the autopsy revealed the tumor so situated that it compressed the common duct but not the pancreatic duct. Here we found a diminished volume and a marked diminution in the trypsin and lipase output. The third patient, who was not operated upon, presented a clinical picture of unmistakable diagnosis. A large, hard, immovable mass was felt in the left upper quadrant, producing in the x-ray a pressure defect in the stomach. There was also a distended, palpable gallbladder. The first test showed practically no response to secretin. The second test, four months later, showed considerable free blood in the duodenal contents with mitotic cells seen under the microscope. The secretin injections in this instance were followed by colicky pains of short duration.

In the group with carcinoma of the biliary ducts the operation revealed 1 case with a primary lesion in the common bile duct and the second with carcinoma of the hepatic

ducts. The secretin test gave entirely normal findings in the common duct lesion, indicating a noninvolved pancreas and a patent pancreatic duct. In this instance the test was of great value in definitely ruling out a pancreatic lesion. The second also gave normal volume and bicarbonate, showing only a slight diminution in the amylase and trypsin.

In the atresia of the common duct post-operatively, the test was repeated four times. In all instances the test gave normal pancreatic findings (Table 2).

**Cholelithiasis**—Fourteen cases of cholelithiasis were examined. Twelve came to operation. Five had stones in the common duct with jaundice. One developed liver abscess. 2 were associated with diabetes, 1 of which had acute edema of the pancreas, and 1 case had intermittent attacks of fatty stools and diarrhea. All of the cases that presented complications revealed varying degrees of pancreatic deficiency. Five presented low amylase, 3 had low trypsin, 5 had low lipase, 2 had low volume, and 2 had low bicarbonate. Five uncomplicated cases gave normal figures.

**Cyst of the Pancreas**—There were 3 cases of cysts of the pancreas. All were operated upon. One was examined while still in the hospital with a persistent pancreatic fistula. This patient showed marked interference in function, the juice being collected from the duodenum as well as from the fistula. When the test was repeated five weeks later the results showed some improvement, still, however, below normal.

The other 2 cases showed only moderate interference in function.

**Cirrhosis of Liver**—There were 3 cases of cirrhosis of the liver, 2 with positive serology. They were fairly advanced cases with ascites and splenomegaly, and 1 was jaundiced. In

learned from this work that the enzymes are first to suffer in pancreatic disease. The enzymes may be dissociated, and, therefore, it is important to study all of them in each case. In severe gross lesions of the pancreas, such as pancreatitis with necrosis, cirrhosis of the pancreas, and obstruction of the ducts, all functions are involved, the volume and the bicarbonate content of the pancreatic juice being depressed as well as the enzyme. Since in these diseases the secretin test findings are constant on repeated examination, it would seem that the pancreas has not the regenerative power that is possessed by the liver when it is damaged.

(3) *Silent Disease of the Pancreas*—By means of the secretin test, silent disease of the pancreas is revealed in such conditions as cirrhosis of the liver, toxic hepatitis with syphilis, and acute yellow atrophy. This opens up what seems to be a new field well worthy of further exploration.

(4) *Obstructive Lesions*—In obstructive lesions of the bile and pancreatic ducts the test helps to localize the lesion, thus making differential diagnosis easier than it has ever been before.

In conclusion, I would like to thank Dr. Diamond and his collaborator for the opportunity to follow this pioneer work which is of such great scientific and clinical promise.

Dr. Henry Doubilet, *New York City*—This paper by Dr. Diamond and several papers previously published by him form a landmark in the diagnosis of diseases of the pancreas. This presentation clearly shows that the secretin test is of diagnostic value, both from medical and surgical aspects. The group of cases usually discussed as chronic steatorrhea can now be divided into those that suffer from pancreatic insufficiency and into a nonspecific group. In patients suffering from obstructive jaundice, a differential diagnosis can now be made preoperatively between carcinoma of the hepatic ducts and carcinoma of the head of the pancreas.

It is obvious that when the differential diagnosis can be made the therapy can be more specific. In addition, we now have a means of flushing out the pancreas just as we can now flush out the liver by various stimulating substances. In cases of acute pancreatitis not only can we treat the patients after their initial recovery but we can also follow up the progress or their recovery.

In my opinion, however, the most valuable aspect of this paper is that it focuses attention on the duodenal hormones as a group and gives definite indication not only that a secretin can be of great diagnostic and therapeutic importance but also that the other hormones, such as cholecystokinin and enterogastrene, will some day prove to be of great value once they are purified.

Dr. Anthony Bassler, *New York City*—I compliment Dr. Diamond on the courage and interest he has shown in the test he has described. Because of the many variables met with and the

interrelationships with other organ functions, this pancreas work is a difficult subject in which to make definite deductions. I note he uses chemical tests for enzymes which are proverbially unreliable. The microscopic observation of a mixture of a weak alkaline solution with neutral fat will show every reduction that lipase does, as shown in 1924. The proteolytic enzyme depends upon enterokinase from the duodenal mucosa to activate it. The only enzyme that flows as such out of the pancreas is amylase. When he states that there is dissociation between the enzymes of the pancreas, he is assuming it from these nonreliable chemical tests. The charts of Dr. Diamond in pathologic conditions showing that all the enzymes are low in disease proves, what I brought out in 1925, that in disease there is no dissociation between them. The alkalinity of pancreatic juice is due to sodium carbonate, not bicarbonate. While secretin, as Bayliss and Starling suggested and perhaps even a synthetic form, may cause a flow of pancreatic juice when introduced into veins, I still feel that duodenal stimulation by food substances is the better method of obtaining a specimen for clinical work. This work has not received the interest and investigation that it deserves, and every effort to elucidate the subject is to be commended. That there is distinct clinical value to it has been proved by a constant continuation with the method I advanced in 1925, which, while not 100 per cent perfect, is still clinically useful in many digestive disorders, in diabetes, and rather generally in nutritional and endocrine work.

Dr. Joseph S. Diamond (*Concluding Remarks*)—I wish to thank the discussors for their interesting comments. With regard to Dr. Bassler's criticism of the tests I regret to say that he appears to be entirely unfamiliar with the high degree of accuracy of these quantitative methods. The Norby method for amylase determination and the Willstätter method for proteolytic enzyme action are standard quantitative procedures and are universally used by enzyme chemists. The lipase method is the original Cherry and Crandall method. It is widely used in this country.

Furthermore, the dissociation of enzymes in pathologic states of the pancreas has already been substantiated by many workers in this field including Ivy, Comfort, Chiray, and others.

Finally, the advantage of an intravenous secretin stimulus over the crude use of food stimuli is self-evident, as in the former method, aided by the double gastroduodenal tube, a pure pancreatic secretion is obtained which can be quantitatively estimated as to volume, alkalinity, and enzyme activity. The use of food stimuli introduced into the duodenum is a crude method resulting in contamination with gastric juice and does not lend itself to accurate quantitative studies.

otherwise normal. One case had a markedly enlarged and hard liver and revealed a low bicarbonate and low lipase. This group also included 4 young men with digestive disturbance and negative gastrointestinal findings. The secretin test in all cases showed deficient function, involving the volume, trypsin, and lipase in each, the amylase in 3, and the bicarbonate in 1. In 2 patients the test was repeated with similar results. Another patient in this group was a young man who suffered from attacks of syncope. During one of these episodes a blood sugar revealed a hypoglycemia of 50 mg. Inasmuch as a possible adenoma of the pancreas was suspected, the secretin test was performed and repeated after an interval of three weeks. All the functions except the bicarbonate were markedly diminished in both tests. The final diagnosis as to the nature of the lesion still remains unconfirmed.

### Summary and Conclusions

Secretin provides a potent and standard stimulus to the pancreas. When injected intravenously in a dose of 0.75 mg. per kilogram of body weight, it causes a marked flow of pancreatic juice. By means of the double gastroduodenal tube one can obtain a clear uncontaminated juice rich in bicarbonate and enzymes. These are quantitatively estimated for a one-hour period, and the results are evaluated according to established normal standards.

In pathologic states of the pancreas the enzyme production first becomes affected. The volume and bicarbonate are more stable and are less easily disturbed. The enzymes may become dissociated so that one enzyme may be more affected than the others. In severe lesions all functions are simultaneously involved.

A series of 116 tests have been performed on 90 patients, of which 24 were normal and 66 comprised various pathologic conditions.

In silent lesions of the pancreas the test has been of inestimable value in detecting disturbances in function of the gland which were hitherto unrecognized and unsuspected. In syphilis, chronic alcoholism, hepatic cirrhosis, toxæ states, and acute yellow atrophy of the liver the test has revealed various degrees of disturbed function.

In obstructive lesions of the common bile duct and pancreatic duct the test helps to differentiate the location of the lesion and the degree of obstruction.

In the group of fatty diarrheas the test helps

to differentiate the steatorrheas with pancreatic deficiencies from those of sprue and idiopathic forms.

In the group of fatty diarrheas the test helps to differentiate the steatorrheas with pancreatic deficiencies from those of sprue and idiopathic forms.

In the follow-up studies the test has shown the reversibility of the function and has been consistent with the clinical improvement of the patient indicating the degree of recovery.

In studying the icterus index of the duodenal juice obtained during the secretin stimulation, one can incidentally establish, with a high degree of accuracy, a normally functioning gall-bladder from a diseased nonfunctioning viscous.

We wish to thank Dr. G. Elias and Mrs. L. Schmidt for their valuable technical assistance in the laboratory.

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### Discussion

Dr. John L. Kantor, *New York City*—Dr. Diamond's work opens up a new era in the study of the pancreas. I should like to confine my remarks to the following:

(1) *Technic*—Dr. Diamond has demonstrated that the duodenal tube can be slipped into the stomach much more quickly with the patient in the erect, rather than in the prone, position. This saves much time in the preliminary phase of the test. By shortening the test period itself from eighty to sixty minutes, he has further abbreviated the time by 25 per cent and, therefore, has made the examination much more practical.

(2) *Evaluation of the Secretin Test*—We have

learned from this work that the enzymes are first to suffer in pancreatic disease. The enzymes may be dissociated, and, therefore, it is important to study all of them in each case. In severe gross lesions of the pancreas, such as pancreatitis with necrosis, cirrhosis of the pancreas, and obstruction of the ducts, all functions are involved, the volume and the bicarbonate content of the pancreatic juice being depressed as well as the enzyme. Since in these diseases the secretin test findings are constant on repeated examination, it would seem that the pancreas has not the regenerative power that is possessed by the liver when it is damaged.

(3) *Silent Disease of the Pancreas*.—By means of the secretin test, silent disease of the pancreas is revealed in such conditions as cirrhosis of the liver, toxic hepatitis with syphilis, and acute yellow atrophy. This opens up what seems to be a new field well worthy of further exploration.

(4) *Obstructive Lesions*.—In obstructive lesions of the bile and pancreatic ducts the test helps to localize the lesion, thus making differential diagnosis easier than it has ever been before.

In conclusion, I would like to thank Dr. Diamond and his collaborator for the opportunity to follow this pioneer work which is of such great scientific and clinical promise.

Dr. Henry Doubilet, *New York City*.—This paper by Dr. Diamond and several papers previously published by him form a landmark in the diagnosis of diseases of the pancreas. This presentation clearly shows that the secretin test is of diagnostic value, both from medical and surgical aspects. The group of cases usually discussed as chronic steatorrhea can now be divided into those that suffer from pancreatic insufficiency and into a nonspecific group. In patients suffering from obstructive jaundice, a differential diagnosis can now be made preoperatively between carcinoma of the hepatic ducts and carcinoma of the head of the pancreas.

It is obvious that when the differential diagnosis can be made the therapy can be more specific. In addition, we now have a means of flushing out the pancreas just as we can now flush out the liver by various stimulating substances. In cases of acute pancreatitis not only can we treat the patients after their initial recovery but we can also follow up the progress or their recovery.

In my opinion, however, the most valuable aspect of this paper is that it focuses attention on the duodenal hormones as a group and gives definite indication not only that a secretin can be of great diagnostic and therapeutic importance but also that the other hormones, such as cholecystokinin and enterogastrone, will some day prove to be of great value once they are purified.

Dr. Anthony Bassler, *New York City*.—I compliment Dr. Diamond on the courage and interest he has shown in the test he has described. Because of the many variables met with and the

interrelationships with other organ functions, this pancreas work is a difficult subject in which to make definite deductions. I note he uses chemical tests for enzymes which are proverbially unreliable. The microscopic observation of a mixture of a weak alkaline solution with neutral fat will show every reduction that lipase does, as shown in 1924. The proteolytic enzyme depends upon enterokinase from the duodenal mucosa to activate it. The only enzyme that flows as such out of the pancreas is amylase. When he states that there is dissociation between the enzymes of the pancreas, he is assuming it from these nonreliable chemical tests. The charts of Dr. Diamond in pathologic conditions showing that all the enzymes are low in disease proves, what I brought out in 1925, that in disease there is no dissociation between them. The alkalinity of pancreatic juice is due to sodium carbonate, not bicarbonate. While secretin, as Bayliss and Starling suggested and perhaps even a synthetic form, may cause a flow of pancreatic juice when introduced into veins, I still feel that duodenal stimulation by food substances is the better method of obtaining a specimen for clinical work. This work has not received the interest and investigation that it deserves, and every effort to elucidate the subject is to be commended. That there is distinct clinical value to it has been proved by a constant continuation with the method I advanced in 1925, which, while not 100 per cent perfect, is still clinically useful in many digestive disorders, in diabetes, and rather generally in nutritional and endocrine work.

Dr. Joseph S. Diamond (*Concluding Remarks*).—I wish to thank the discussors for their interesting comments. With regard to Dr. Bassler's criticism of the tests I regret to say that he appears to be entirely unfamiliar with the high degree of accuracy of these quantitative methods. The Norby method for amylase determination and the Willstätter method for proteolytic enzyme action are standard quantitative procedures and are universally used by enzyme chemists. The lipase method is the original Cherry and Crandall method. It is widely used in this country.

Furthermore, the dissociation of enzymes in pathologic states of the pancreas has already been substantiated by many workers in this field including Ivy, Comfort, Chiray, and others.

Finally, the advantage of an intravenous secretin stimulus over the crude use of food stimuli is self-evident, as in the former method, aided by the double gastroduodenal tube, a pure pancreatic secretion is obtained which can be quantitatively estimated as to volume, alkalinity, and enzyme activity. The use of food stimuli introduced into the duodenum is a crude method resulting in contamination with gastric juice and does not lend itself to accurate quantitative studies.

otherwise normal. One case had a markedly enlarged and hard liver and revealed a low bicarbonate and low lipase. This group also included 4 young men with digestive disturbance and negative gastrointestinal findings. The secretin test in all cases showed deficient function, involving the volume, trypsin, and lipase in each, the amylase in 3, and the bicarbonate in 1. In 2 patients the test was repeated with similar results. Another patient in this group was a young man who suffered from attacks of syncope. During one of these episodes a blood sugar revealed a hypoglycemia of 50 mg. Inasmuch as a possible adenoma of the pancreas was suspected, the secretin test was performed and repeated after an interval of three weeks. All the functions except the bicarbonate were markedly diminished in both tests. The final diagnosis as to the nature of the lesion still remains unconfirmed.

### Summary and Conclusions

Secretin provides a potent and standard stimulus to the pancreas. When injected intravenously in a dose of 0.75 mg. per kilogram of body weight, it causes a marked flow of pancreatic juice. By means of the double gastroduodenal tube one can obtain a clear uncontaminated juice rich in bicarbonate and enzymes. These are quantitatively estimated for a one-hour period, and the results are evaluated according to established normal standards.

In pathologic states of the pancreas the enzyme production first becomes affected. The volume and bicarbonate are more stable and are less easily disturbed. The enzymes may become dissociated so that one enzyme may be more affected than the others. In severe lesions all functions are simultaneously involved.

A series of 116 tests have been performed on 90 patients, of which 24 were normal and 66 comprised various pathologic conditions.

In silent lesions of the pancreas the test has been of inestimable value in detecting disturbances in function of the gland which were hitherto unrecognized and unsuspected. In syphilis, chronic alcoholism, hepatic cirrhosis, toxic states, and acute yellow atrophy of the liver the test has revealed various degrees of disturbed function.

In obstructive lesions of the common bile duct and pancreatic duct the test helps to differentiate the location of the lesion and the degree of obstruction.

In the group of fatty diarrheas the test helps

to differentiate the steatorrheas with pancreatic deficiencies from those of sprue and idiopathic forms.

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In the follow-up studies the test has shown the reversibility of the function and has been consistent with the clinical improvement of the patient indicating the degree of recovery.

In studying the icterus index of the duodenal juice obtained during the secretin stimulation, one can incidentally establish, with a high degree of accuracy, a normally functioning gallbladder from a diseased nonfunctioning viscous

We wish to thank Dr. G. Elias and Mrs. L. Schmidt for their valuable technical assistance in the laboratory.

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### Discussion

Dr. John L. Kantor, New York City—Dr. Diamond's work opens up a new era in the study of the pancreas. I should like to confine my remarks to the following:

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FIG 1 CASE 1



FIG 2 CASE 2

ligation of a single ureter with septic or aseptic atrophy. Two of the patients showed changes that could have existed before operation, i.e. double pelvis with blunting of minor calices. Similar x-ray studies were not made preoperatively. Whether or not the incidence of such changes in the urinary tract is greater than would occur in a similar series with the same pelvic pathology, but not operated on, will be reported in a subsequent paper. It is interesting to note that in this series 7 cases showed anomalies of urinary anatomy. Another patient who had been cystoscoped preoperatively showed hydroureter in the right side. A panhysterectomy was performed for fibroids and the postoperative pyelogram showed no evidence of hydroureter.

### Case Reports

**Case 1 (Fig 1)**—Mrs M S, a white married woman, aged 29, mother of three children, entered the Albany Hospital because of pain in her right lower quadrant, vaginal discharge, and irregular profuse vaginal bleeding. There was no fever, chills, vomiting or symptoms of the urinary system.

Physical examination revealed bilateral lower abdominal tenderness. The vagina was relaxed with mild cystocele. The cervix was lacerated and the uterus retroverted and adherent. There were bilateral adherent tender masses.

The urine contained a 1 plus albumin and 2 to 3 white blood cells per high-power field. The Wassermann test was negative.

**Operation** Panhysterectomy, bilateral salpingo-oophorectomy, appendicectomy.

**Diagnosis** Acute and chronic salpingo-oophoritis.

**Hospital Course** Uneventful sojourn.

An intravenous pyelogram showed dilatation of the kidney pelvis and calices and a moderate degree of hydroureter on either side.

**Case 2 (Fig 2)**—Mrs H P, a white married woman, aged 26, mother of one child, complained of pain in the lower part of the abdomen of eleven months' duration. She had had leukorrhea since the birth of the child and dysmenorrhea before the first day.

Physical examination showed tenderness low down on both sides, more on the right. Vagina was of marital type, cervix was lacerated, uterus, retroflexed and adherent, adnexa, tender and adherent.

The urine was negative, blood Wassermann was negative, urethral and cervical smears were positive.

**Operation** Panhysterectomy, bilateral salpingo-oophorectomy, appendicectomy.

**Diagnosis** Chronic pelvic inflammatory disease, bilateral hydrosalpingitis, retroflexed uterus.

**Hospital Course** Uneventful.

Intravenous urography showed hydroureter on right.

### Conclusions

1. There were five known injuries to the urinary tract during 4,010 hysterectomies on the Gynecological Service of the Albany Hospital.

# URINARY TRACT INJURIES DURING PANHYSTERECTOMY

ARTHUR J WALLINGFORD, M D , Albany, New York

THE purpose of this paper is to present the observations of urinary tracts of 100 patients whose uteri have been removed by the total, complete technic called panhysterectomy

The proposed advantages of the various operations for removal of the uterus have been presented in several papers during recent years. The publications have been in a general sense devoted to the relative merits of subtotal or supravaginal removal of the uterus *versus* total removal or panhysterectomy by the abdominal route. Among the principal points enumerated have been the incidence of injuries to adjoining structures, particularly the bladder and ureters, during the removal of the uterus for benign, as well as malignant, lesions of that organ.

In a review of the recent literature on hysterectomies, one can readily note that the discussion is devoted to the morbidity and mortality rates of one method of removal of the uterus over the other. It is obvious that when the morbidity rate increases the mortality rate must necessarily also increase. The proponents of subtotal hysterectomy maintain that their complications are less numerous. On the other hand, the champions of the total hysterectomy maintain that in the hands of well-trained individuals the morbidity is less than for supravaginal hysterectomy. In addition, they also maintain that the cervix left behind is not only a source of leukorrheal discharge and of acute and chronic infection, specific and nonspecific, but that the cervix is also a site for malignant changes. A paper presented by McDonald<sup>1</sup> showed that in over 2,600 consecutive panhysterectomies, performed on the Gynecological Service of the Albany Hospital by ten different operators including the five residents, the mortality rate was less than the incidence of stump carcinoma. The mortality rate was 1.02 per cent. Of 2,355 complete hysterectomies for benign conditions, the operative mortality was 0.67 per cent. The incidence of stump cancer as reported by von Graff<sup>2</sup> was 4.1 per cent in 4,269 cases of cancer of the

cervix. The other arguments advanced for our belief in panhysterectomy have been presented by McDonald in another paper. During the discussion of that paper it was observed that injuries to the urinary tract, diagnosed and undiagnosed, were not uncommon complications.

The injuries of the bladder and ureters are frequently discovered at postmortem examination if not repaired at the time of operation. At other times the presence of ureteral or vesical fistulas soon make themselves evident. Yet, on other occasions, as reported by several authors, there is the unrecognized aseptic atrophy of one kidney when the corresponding ureter has been ligated.

A study of 4,010 consecutive hysterectomies performed in the Albany Hospital (Gynecological Service) over a thirteen-year period from January 1, 1926, to December 31, 1938, revealed five known injuries to the urinary tract, 3,750, or 93 per cent, of these operations were the total complete hysterectomy or panhysterectomy. Admitting the possibility of undiagnosed injuries, such as ligation of one ureter, the following study was made.

One hundred cases of panhysterectomies performed by two residents on the Gynecological Service of the Albany Hospital were selected. The pathologic indications for these operations were generally of a benign character, such as fibroids, pelvic inflammatory disease, endometriosis, and an occasional tubal pregnancy. Careful studies were made of the urinary symptoms before operations, during the convalescent period, and postoperatively. Burning, frequency, and nocturia were the chief preoperative complaints in 24 cases. Sixteen complained of the same symptoms postoperatively. There were no cases of pyelitis. There were 3 patients who complained of lumbar pain, one of these showed definite changes on x-ray studies.

The urinary tracts were then studied by means of intravenous pyelograms. Diodrast was the material used. The x-ray plates were read by Drs. Howard and Cross of the roentgenologic department. Two patients showed definite changes of the upper urinary tract, such as hydroureter, dilatation of the renal pelvis, and blunting of the calices. There were no x-ray evidences of complete

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 8, 1940.

From the Department of Gynecology and Obstetrics of the Albany Hospital and the Department of Gynecology and Obstetrics of the Albany Medical College.

# AVITAMINOSIS A

## Incidence in a Group of One Hundred Hospitalized Children as Measured by the Biophotometer

HOWARD G. RAPAPORT, M D , and DOROTHY GREENBERG, B A , New York City

IT IS generally accepted that inability to accommodate the eyes rapidly to the glare of lights at night is a manifestation of vitamin A deficiency. Night blindness and its association with avitaminosis A was even known to some observers in ancient times. It was Hippocrates who suggested the addition of liver to the diet for its treatment.

In 1934 Jeans and Zentmire<sup>1</sup> employing a Birch-Hirschfeld instrument were the first to describe a practical method for the determination of vitamin A deficiency. They tested 213 children who were hospitalized for various causes. Of this group of children 21.5 per cent showed subnormal tests indicative of avitaminosis A. In 1937 an instrument known as the biophotometer<sup>2</sup> was perfected and used for testing a group of school children in whom 19 per cent were found to give subnormal and 5 per cent borderline readings. The detection of vitamin A deficiency by means of this instrument was confirmed by Jeghers,<sup>3</sup> Park,<sup>4</sup> Corlette *et al.*,<sup>5</sup> Vanzant,<sup>6</sup> Maitra and Harris,<sup>7</sup> Schuck and Miller,<sup>8</sup> and others.

The principle underlying the use of the biophotometer is based on the following theoretic considerations.<sup>9</sup> Normal vision is dependent on the presence in the retina of an adequate supply of visual purple, considered to be identical to vitamin A. When the eye is exposed for a few minutes to bright light, some of the visual purple is destroyed by bleaching. In consequence, the acuity of vision as measured by the ability to see a dimly illuminated object in the dark is lessened. This acuity of vision is further depressed in persons deficient in vitamin A. The extent that sight returns to normal depends on the amount of visual purple that can be regenerated, a conversion directly governed by the available supply of vitamin A. Schematically, the reactions are as shown at the bottom of the right-hand column.

This paper comprises a study of the incidence of vitamin A deficiency as measured by the biophotometer on a group of 100 afebrile children, ranging in age from 6 to

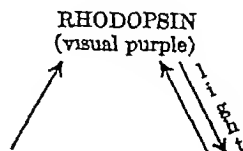
13, from the pediatric wards of Mount Sinai Hospital. They had various illnesses.

## Results

Sixty children or 60 per cent of this group tested were found to possess normal visual acuity; another 11 children or 11 per cent gave borderline readings. The remaining 29 children or 29 per cent of this series were found to have marked deficiency in their visual acuity.

Maitra and Harris<sup>7</sup> reported that among 200 elementary school children 22 to 26 per cent were definitely subnormal. They found vitamin A deficiency to be more prevalent among younger children than among adolescents. Their results were consistent with repeated tests. Park,<sup>10</sup> in a study covering persons of all ages, maintains that the biophotometer affords an accurate means to determine by test the vitamin A content of the body, and he found a "large percentage" to be low in vitamin A. Further, Gridgeman and Wilkinson<sup>11</sup> stated that 30 per cent of their series of persons of all ages demonstrated vitamin A deficiency, while Jeghers<sup>3</sup> reported an incidence of 35 per cent of a group of 168 medical students.

The incidence of avitaminosis A as found in this study is greater than any previously reported. This may be due to the fact that a number of the children tested came from homes of the lower economic strata. Such children may have been just barely within the range of normal vitamin A limits prior to the illness that necessitated hospitalization. Moreover, Clausen and McCord<sup>12</sup> demonstrated that infection causes a prompt and considerable decrease in the concentration of carotene, xanthophyll, and vitamin A in the blood plasma.



Vitamin A + protein ← Retinene + protein  
(visual yellow) (visual yellow)

From the Pediatric Service, Mount Sinai Hospital, New York City, Dr. Bela Schuck, chief.

Submitted for publication, February, 1940.

2 Undiagnosed injuries of the urinary tract as a result of panhysterectomy do occur

3 There were 2 patients who showed changes in the upper urinary tract following 100 panhysterectomies, using intravenous pyelography

4 Seven patients showed anomalies of the urinary tract

5 One patient with hydroureter, as shown by intravenous pyelography before operation for fibroids, showed no changes postoperatively

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### Discussion

Dr Arthur J Murphy, *New York City*—This interesting and valuable study of Dr Wallingford's includes several important facts. It emphasizes the frequency of urinary symptoms in gynecologic patients. Of 100 routine panhysterectomies, there were 24 patients who complained of preoperative frequency, dysuria, and nocturia. It is a serious omission to overlook urinary symptoms because there is more evident pathology in the pelvis, and, in my opinion, if they are accompanied by positive urinary findings, cystoscopic study is indicated. Occasionally, important pathology in the urinary tract will be discovered which will require treatment before panhysterectomy or other variations, such as anomalies or displacements of the bladder or ureters, may be detected and thereby aid in preventing injury during operation. In a recent case a large ovarian cyst was removed from a patient who developed an acute postoperative bilateral pyelonephritis. Cystoscopic study demonstrated a large calculus in the left ureter and a huge branching calculus in the right kidney. It was a serious matter to have disregarded the urinary symptoms and to have operated on this patient without knowing the condition of her urinary tract. As a result she developed a grave renal infection that required prolonged treatment before the urinary calculi could be removed.

The diagnosis of serious injuries of the bladder or ureters is usually manifested by the appearance of a urinary fistula. Fortunately, in the hands of the surgeon who has had a large experience in total hysterectomy such injuries to the urinary tract will be infrequent. Nonetheless, when they do occur they are of great importance because several operations are often required for their repair, a kidney may have to be sacrificed, or they may even prove fatal.

On the other hand, minor lesions of the urinary tract often pass undiagnosed. Dr Wallingford

states that undiagnosed lesions of the urinary tract do occur. In his routine postoperative study of 100 panhysterectomies he found definite pathology in the urinary tract in 2 cases. This study is important, therefore, because it proves the existence of unsuspected injuries to the urinary tract during panhysterectomy. These injuries may not have great immediate importance, but, because they are undiagnosed and therefore untreated, they may result in more serious pathology in the future, and they probably account for some of our postoperative urinary infections.

The frequency of these infections following panhysterectomy cannot be determined from the study of only 100 cases. It is not the purpose of this discussion to appraise the merits of total or subtotal hysterectomy, but it is probably true that the percentage of undiagnosed injuries would be greater following total hysterectomy.

This study is a forward step in estimating the results of panhysterectomy and its influence on the urinary tract. Because of the small number of cases examined and because intravenous urography frequently fails to delineate accurately the entire urinary tract, exact conclusions cannot be determined from this study. Precise results, however, should be obtained by preoperative and postoperative cystoscopic studies in a larger series of cases.

I enjoyed hearing Dr Wallingford's excellent paper and I appreciate the opportunity of discussing it. I hope that we will have the opportunity of hearing further from Dr Wallingford on this important subject.

Dr E von Graff, *New York City*—I do not intend to go into an argument as to the advantages of panhysterectomy. The excellent results of the Sampson school are certainly gratifying to me as an insistent advocate of total versus subtotal hysterectomy. With proper technic, injuries to the ureters are rare and can be satisfactorily repaired if discovered during operation. Injuries recognized only a week or more after operation are a different problem and may require nephrectomy unless the kidney function has been destroyed either spontaneously or by x-ray. The cases in which function can be restored by surgery are few, and I should like to report such a case. A woman was admitted to my department in Iowa City with bilateral ureter fistula following panhysterectomy performed elsewhere for cancer of the cervix. The right ureter was successfully implanted seven months after the original operation. Four months later, a "hair fistula" of the left ureter having been discovered, the second ureter was successfully implanted into the bladder according to the technic of Sampson.

The patient has no more right to all the truth than he has to all the medicine in your saddle-

bag  
him

He should get only so much as is good for  
—Oliver Wendell Holmes

# TUMORS OF ISLETS OF LANGERHANS WITH HYPERINSULINISM

VIRGINIA KNIFFLAND FRANTZ, M D, New York City

IN THE past six years a number of patients have been explored at the Presbyterian Hospital because of hypoglycemia. The first operation was done in January, 1934. The first 6 cases, together with a review of the literature, were reported by Whipple and Frantz,<sup>1</sup> and an article by Frantz<sup>2</sup> deals with the possible malignancy of some of the tumors removed from later cases.

The tumors, although more frequently recognized clinically than in former years, are not common, and the great majority of published cases, even those with full pathologic reports, have appeared in clinical journals. It would seem, therefore, appropriate to present the gross and microscopic findings, since, except in hospitals where there is known to be a particular clinical interest in the subject, no great number of these tumors has reached any single laboratory.

A review of 20 published islet cell tumors, together with 4 of his own, was published by Warren<sup>3</sup> in 1926. In none of these were symptoms of hypoglycemia noted. In the following year the first case of such a tumor with hyperinsulinism was published by Wilder.<sup>4</sup> This was a carcinoma of cells closely resembling islet cells, with metastases to liver, regional nodes, and mesentery. The patient had a blood sugar as low as 45 mg. per hundred cubic centimeters and suffered from attacks of unconsciousness. Exploratory operation confirmed the preoperative diagnosis, and autopsy a month later yielded metastatic nodules from the liver which were extracted by Best's method. The extract acted like insulin when injected into rabbits.

The first surgical cure was effected by Roscoe Graham. The patient had an islet cell tumor which was excised. This case was published by Howland and his co-workers<sup>5</sup> in 1929, and in the fall of 1939 a ten-year follow-up<sup>1</sup> was reported on this patient who has remained symptom-free.

Since 1929, case reports have appeared with increasing frequency. Only a few tumors have been reported in which no symptoms of hypoglycemia were present. In 1935 in our own review of the literature, there were 31

cases of tumor with hyperinsulinism, including our own, and 31 cases with no recorded hyperinsulinism, an equal number. Since then the reports of functional cases have continued, but few reports have appeared of non-functional tumors. These are usually incidental findings at autopsy, and it is difficult to know the actual frequency. It is of interest that, morphologically, with the ordinary stains, the functional and nonfunctional tumors cannot be distinguished. Whether the specific granule stains will ever become sufficiently reliable to make the differentiation is a matter of speculation. The difficulty of obtaining autopsy material fresh enough for these techniques is well known. At present, therefore, the pathologist can make a diagnosis of islet cell tumor, benign or malignant, but is not in a position to qualify this with any statement about function.

In reviewing the literature up to January 1, 1940, and including our own cases, we found a total of 96 cases of islet cell tumor with hypoglycemia. We have had personal communications concerning a number of other cases and have had the opportunity of seeing a number of specimens, but we have analyzed only the published cases. These fall into three groups, as shown in Table 1.

TABLE 1—ISLET CELL TUMORS WITH HYPOGLYCEMIA

	Total
Tumors removed at operation and considered benign	46
Tumors found at autopsy and considered benign	24
Total benign tumors	70
Tumors removed at operation and suspected malignant	19
Tumors found at autopsy and suspected malignant	2
Total suspicious tumors	21
Carcinoma with metastases proved malignant	
Total islet cell tumors	96

Note. These figures represent individual cases and do not include the multiple tumors of each case.

The tumors, excluding the obviously infiltrating growths, are somewhat variable in appearance. Grossly, they are small, usually about 1.5 cm. in diameter, and they occur most frequently in the tail of the pancreas where the islets are most numerous. But they may be found anywhere in the gland. They appear encapsulated, and at operation *in situ* they have a reddish or purplish hue.

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 8, 1940.

From the Surgical Pathology Laboratory of the College of Physicians and Surgeons, Columbia University and the Department of Surgery of the Presbyterian Hospital.

A serious criticism directed against the use of the biophotometer for determination of vitamin A deficiency has been that when tests were repeated on the same subjects, on successive occasions, different and improved results were frequently observed. This has been called the factor of learning. We believe this factor has been unduly stressed. In a study of a group of children with cutaneous manifestations of vitamin A deficiency by Dr Lehman and one of us (H G R),<sup>12</sup> it was found necessary to subject these children to biophotometric tests several times prior to the advent of therapy. Furthermore, we found that when the test was thoroughly explained to the child and a trial period was permitted before the actual performance of a complete test, all tests were in approximate agreement. We believe, also, if one appreciates that the biophotometer is an instrument that affords qualitative rather than quantitative readings, then the interpretation of such results will not be difficult.

In an analysis of the children in this study from the point of view as to whether vitamin A deficiency is more closely associated with acute rather than chronic illness, our impression is that it is more frequently associated with chronic disease, which is to be expected

## Summary

A group of 100 hospitalized afebrile children were tested with the biophotometer, an instrument employed to determine the vitamin A content in the body. Sixty per cent of the children were found to give a normal test to vitamin A, 11 per cent were "borderline," and 29 per cent of the children showed a definite deficiency in vitamin A.

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## RELIEF FOR A MEDICAL HEADACHE

Negotiations that have been in a rather nebulous state for several years and have become a practical issue for some months have culminated in a most constructive economic advance for the physicians of Michigan, reports the *Journal of the Michigan State Medical Society*.

Mr. William J. Burns, executive secretary of the society, made the initial contacts, and a committee of the council with Mr. Burns has finally secured a voluntary agreement with the representatives of the insurance companies active in Michigan which should be most welcome to every practitioner. It should definitely be realized that the fullest cooperation was forthcoming from the representatives of the associations of insurance companies both from the "old line," and the "mutual" companies as well as the "independent" companies of Michigan. Their enthusiastic aid was most acceptable and appreciated.

One of the headaches of the practice of medicine has been the fact that the attending physician to an automobile accident victim has too frequently been unable to collect for his services. The same situation also has been a vital problem for hospital management. Now there will be some relief from an unpleasant situation!

The gist of the agreement is that the patient who has been injured in an automobile accident and for whom an insurance company is to be

financially responsible will sign an agreement giving the insurance company the right to make separate checks covering charges for services to the hospital and physician. There should be but little difficulty in getting this assignment from the patient while the memory of the service rendered is still fresh in his mind. The one agreement will cover both the hospital and the physician. The insurance companies have promised to assist the physicians in every possible way in getting these signatures and in the subsequent legal procedures.

Of course, there are a great many of these accident cases (not covered by any insurance) that must still be cared for as charity, but at least the physician will know that if an insurance company is liable for the care of his patient, the money for his services probably will not be used by the "grateful" patient to buy a new car or a fur coat instead of paying the bills for services that saved him from pain, suffering, or death.

In Wisconsin a similar agreement has been in existence for two years. In Massachusetts there is a separate agreement for the physicians and for the hospitals.

If this works out as satisfactorily in Michigan as it has in Wisconsin and Massachusetts, physicians of Michigan, as did the council, may well applaud the work of this committee that completed this welcome agreement.

## Discussion

Dr Maurice N Richter, *New York City*—Dr Frantz has called our attention to certain peculiarities of a tumor with which few of us have had much experience. Tumors of the islets of Langerhans are uncommon, and we are fortunate in having Dr Frantz's experience with such a large series.

It is apparent that these tumors belong to a group characterized by a tendency to invade blood vessels. As vascular invasion is a feature commonly associated with malignancy, it is surprising to find that clinical evidence of malig-

nancy is not found more frequently. The significance of vascular invasion in these tumors must be re-evaluated. This can be done best by statistical analysis for which adequate records, including the presence or absence of vascular invasion, are essential.

I agree with Dr Frantz on the difficulty of staining specific granules in the islet cells. This is not easy in the normal pancreas and is much more difficult in islet tumors. Even if the granules are stained, their significance in tumors cannot be determined until more is known about them in normal islets.

## "THE JARGON MAY GET US IF WE DON'T WATCH OUT"

Nearly everyone knows the predicament of the man who caught the bear by the tail—there was serious uncertainty as to whether he had the bear or the bear had him. A somewhat similar problem is presented in the terminology employed in a number of the sciences and near sciences related to public health, remarks the *American Journal of Public Health*. Thus, some years ago the helminthologists took a tail-grip on "worm burden," and for a while one wondered if the patient had the burden, or the worms had the patient, or if possibly the worm burden had the helminthologists. Their use of this phrase, however, does not constitute a major semantic sin; they were tempted by the blandishments of a catch phrase and they fell, but helminthologists are, after all, pretty robust scientists and we need not worry much about them.

A more serious situation is created by the etymologic expeditions of the hardy prospectors who find themselves in the swamps and forests surrounding the established settlements of public health. From the enthusiasm of these pioneers one gains an impression that they have discovered a promised land, and this may be true. Unfortunately, however, they seem to have decided that as a matter of strategy they must establish vocabulary frontiers and diction block-houses so remote from settled language usage that savages from the hinterland of lay affairs and the effete plodders of conventional public health work may never hope to invade the new domain.

Recently we picked up a paper from one of these Shangri-Las of public health. The opening sentence gave promise that the essayist would get right down to cases and make a forthright and understandable statement. Soon,

however, that author grabbed the word "technique" by the tail and from then on it was anybody's fight. For our own part, we were conscious of the same urge to kill that arises when one's hostess fails to restrain her child from demanding too much attention for his new parlor trick. On further reading of the paper, however, this irritation gave place to amazement, for nouns began to take on the functions of verbs and then "learning processes," "skills," "attitudes," "situations," "levels," and "challenges" began to "motivate," "implement," "integrate," "coordinate," and "enrich" "patterns" of "culture" and "philosophy"—or vice versa.

We put that paper down with a feeling that we were losing our grip, that we had failed to keep up with the newer things, that the old and heretofore secret feeling of inadequacy was coming shamefully to light. We felt that without quibbling we must make a decision as to whether we understood this thing or not. Finally, and reluctantly, we admitted that we didn't know what the deuce the author was driving at. This admission gave rise to a new courage, and we wondered if perhaps in the tussle between the bear and the author the outcome was not a victory for the bear.

There is, of course, a place for technical terms, and in writing or speaking it is desirable to choose expressions that give just the shade of meaning one wishes to convey. But this nicety of selection is quite a different thing from the too heavy burdens and the too long hours of work that some impose upon defenseless words and phrases. Maybe we need word-burden legislation or a Society for the Prevention of Cruelty to Phrases. Otherwise, the jargon is going to get us if we don't watch out.

## CONFERENCE—SARATOGA SPRINGS

The Annual Conference of Health Officers and Public Health Nurses will be held at Saratoga Springs, June 24 to 26, inclusive. The Grand Union Hotel will be headquarters. The seventh annual meeting of the New York State Association of School Physicians will be held Monday, June 23, at the same place.

## TAKE MORE INTEREST, TOO

"By the way," said a lawyer in drawing up a will, "I notice you have mentioned six bankers as pall bearers. Wouldn't you rather choose some friends with whom you are on better terms?"

"No, that's all right," was the quick reply. "Those fellows have carried me so long they might as well finish the job."—*Ill. Med J.*

TABLE 2

Benign Cases			
Capsule		Blood vessel invasion	
Complete	28	Stated absent	15
Incomplete	20	Not described	55
Not described	22		70
	70		
Questionable Cases			
Capsule		Blood vessel invasion	
Complete	1	Present	7
Incomplete	15	Stated absent	1
Not described	5	Not described	13
	21		21
Proved Cases			
Capsule (probably not complete in any case)		5 cases	
Blood vessel invasion (not described)		5 cases	
Sites of metastases Liver, lymph glands, mesentery, peritoneum and epicardium			

After removal they sometimes appear pinkish yellow, in contrast to the yellow surrounding pancreas, and are of slightly firmer consistency. A number of the tumors show central fibrosis, even calcification, and these may be quite firm. They are not infrequently multiple.

Microscopically, the most highly differentiated tumors closely resemble gigantic islands. A goodly proportion (Table 2) show complete encapsulation. The cells closely resemble cells of normal islets, but the differential granule stains so far reported are quite variable. In our hands, these stains have not been highly successful, and one wonders also if there may not be a variability in the proportion of cells containing alpha and beta granules, depending on the physiologic state of the tissue at the time of removal.

Some of the tumors show quite striking rosette formation about central capillaries. Others show a ribbon-like arrangement of cell cords. Others have a more medullary arrangement. Ducts are frequently present, and this is in accord with the general belief that islet cells can be derived from differentiated duct epithelium. Many of the tumors show degenerative changes and fibrosis, which is central, the better preserved tumor cells lying at the periphery.

Our first 8 tumors removed from 6 patients conformed to this pattern, 3 being incompletely encapsulated microscopically. We have now had a total of 17 patients explored for hypoglycemia. Two of these showed no tumor. Three cases of the 15 with tumor had 2 tumors, a total of 18 tumors for study. In the ninth case, which was a tumor with ribbon-like arrangement, we were surprised to find a somewhat more cellular variation than we had noted previously and clumps of tumor cells in the blood vessels. This tumor

was not encapsulated. Unfortunately, the patient died of pneumonia postoperatively, and no autopsy was obtained.

We have since had 3 other tumors in which there was lack of encapsulation, and tumor cells were found in vessels. One of these was less differentiated than any other tumor in our series, and we felt that it should be classified as a carcinoma. Its characteristics in tissue culture tended to confirm this. This patient is free from evidence of disease thirty-five months after operation. The other 2 more recent cases are also symptom-free. We have wondered if these tumors could be regarded as analogs of the so-called "adenoma malignum" type of carcinoma of the thyroid, which is slow growing and late to metastasize. Metastases or local recurrences of these tumors should signal their presence by a return of hypoglycemia. This has not occurred in our cases nor in any which we have been able to find in the literature. But other authors have also been in doubt as to the significance of these criteria of malignancy. We have divided the 96 cases into those that were considered benign, those that we, and other authors, thought possibly malignant, and those that were of proved malignancy. The analysis is shown in Table 2.

It will be noted that the proportion of questionable cases to benign cases is high—21 to 70. It is of interest that the first case with tumor surgically removed—whose ten-year follow-up I have already commented on—was considered when first examined to have some features of malignancy. Possibly all 21 were malignant, and surgery, in the course of which 19 of these were found, has been unusually happy in its result. Possibly a longer follow-up will demonstrate recurrence or metastasis. We have urged<sup>6</sup> that these cases should not be lost. Only the follow-up can afford the pathologist a basis for accurate diagnosis on these borderline lesions.\*

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\*To emphasize the difficulties in this study, we have recently had a case of carcinoma of the head of the pancreas, necessitating a large resection, which microscopically shows typical islet cell structure. Yet this patient had no symptoms of hypoglycemia.

legs and severe low back pain. She gave a history of amenorrhea of approximately seven months' duration. During the course of her illness, small purple striae had appeared in the abdominal wall, and a manifest tendency toward purpuric hemorrhages in the skin had been noticed. She had observed increased fat deposits in the face and trunk, while, in contrast, her extremities had become thinner.

Physical examination disclosed a well-developed and well-nourished woman, whose abdomen, neck, and face were obese, but whose extremities were thin. The blood pressure was 170/120. There were numerous ecchymoses over the legs. There was a slight hirsuties of the face and neck. The clitoris was enlarged. X-rays revealed marked decalcification of all the bones. The blood calcium was 10.6 mg per hundred cubic centimeters, the blood phosphorus, 3.7 mg per hundred cubic centimeters. Perirenal air insufflation showed an enlarged adrenal on the left side.

The patient was operated upon, and a golf-ball-sized tumor was removed from the left adrenal. This proved to be an adrenal cortex adenoma. She was given postoperative supportive measures including cortin. Postoperatively, she went into shock, her blood pressure dropping to 90 mm mercury systolic. She had repeated episodes of temperature rise, dyspnea, and cyanosis, her course was gradually downhill, and she died three weeks after operation.

At autopsy, the operative site in the left lumbar region showed the presence of a chronically infected granulomatous mass. Only small remnants of adrenal tissue were found on this side. The right adrenal gland was small and flat. On section, the cortex was distinctly narrowed.

Microscopic examination of the right adrenal showed a cortical atrophy involving all zones, but particularly the zona glomerulosa. Bronchopneumonia was present in both lower lobes of the lungs. The pituitary showed the hyaline changes in the basophil cells, to which attention has been called by Crooke.<sup>2</sup>

**Case 3**—A woman, aged 37, was admitted to the hospital with a history of onset of amenorrhea seventeen months before admission. Coincidentally, a papulopustular rash appeared on the face, arms, forearms, chest, and back, followed by the appearance of hair on the face and abdomen and by an increased growth of hair on the arms and legs. She gained over 30 pounds in a year, the added fat being distributed mostly on the trunk, thighs, buttocks, and breasts. Her voice became deeper and masculine in quality. About five months before admission her blood pressure was found to be 250 mm mercury systolic. From this time on there was a gradual appearance of symptoms of diminished cardiorespiratory reserve, and ankle edema was noted.

Physical examination on admission revealed a well-developed obese woman with ruddy face

and hands. The extremities and face were dusky-sun-tanned. The obesity involved the face, neck, trunk, and proximal portions of the extremities. Ecchymoses were present on the sides of the abdomen and thighs. Pubic hair of normal distribution was present. The skin was flushed, warm, oily, sweaty, and rough. The clitoris was hypertrophied. There was a profuse acneiform eruption of the face, trunk, neck, and proximal portions of the extremities. The hair of the head was sparse and coarse, and there was a fine hirsuties of the face, chest, extremities, and abdomen.

An x-ray of the chest showed diffuse nodular shadows suggestive of metastatic malignancy. A large mass was seen above the displaced right kidney in the flat plate taken of the abdomen. The blood calcium was 10 mg per hundred cubic centimeters, the phosphorus, 4 mg per hundred cubic centimeters. The patient ran a progressively downhill course, dying in cardiac failure twenty-three days after admission to hospital.

At autopsy, the right adrenal was found to be replaced by an encapsulated ovoid tumor measuring 14 by 10 by 5 cm. The adrenal vein was filled with tumor thrombus that extended into the vena cava inferior. On section, the surface of the tumor was a mottled yellow to yellow-pink in color. Metastases were present in the liver and were extremely abundant in the lungs.

Microscopic examination of the adrenal tumor showed many areas of necrosis. The intact portions were cellular, the morphology of the cells varying. Some areas consisted of cells arranged in trabeculae and sheets, these cells being small and their nuclei small and dark staining. In addition, many areas were composed of irregularly shaped, frequently multinucleated, giant cells of varying size and density of their nuclei. The metastases were more regular in their appearance, and their cells resembled the adrenal cortex more closely.

In contrast to this huge tumor mass, the left adrenal was small and weighed 3.2 Gm. The sectioned surface of the cortex was distinctly narrowed. Microscopic examination showed a general narrowing of all zones, as well as areas in which the zona glomerulosa was absent and the zona reticularis atrophic. In addition, there were scattered groups of cells with irregular hyperchromatic nuclei, which were suggestive of early adenoma formation, and a single large fibrous scar in the zona reticularis. The pituitary in this case also showed the hyaline changes in the basophil cells as described by Crooke.

## Discussion

As has been mentioned in all 3 cases, the contralateral adrenal was atrophic. In the first case, even the adrenal from which the adenoma was removed showed a cortical atrophy. A fairly thorough search of the literature

# CONTRALATERAL ADRENAL ATROPHY ASSOCIATED WITH CORTICAL ADRENAL NEOPLASMS

TOBIAS WEINBERG, M D , Baltimore

THE operative attack upon the adrenals in past years, particularly when an obvious tumor was present, has been accompanied in a majority of instances by a lethal outcome shortly following the operation. These patients were observed to go into profound shock, from which, despite the usual therapeutic attempts, such as blood transfusions and intravenously administered saline, they did not rally, death ensuing within twenty-four to forty-eight hours. The almost constant failure of these patients to rally was perplexing. Even after suspicion was directed to the remaining adrenal, the problem presented itself—what therapy should be instituted. Following Swingle and Pfiffner's<sup>1</sup> success in maintaining adrenalectomized dogs in a normal physiologic state by the administration of an adrenal cortex extract, similar therapeutics was instituted in those cases requiring surgical removal of part or all of an adrenal gland. However, this mode of therapy has not proved so simple as it may appear at the first glance. Only with the recently acquired, more thorough knowledge of the various chemical constituents of the adrenal cortex has the haze begun to clear and a truly scientific approach to therapy been instituted.

For a number of years attention has been called to the probably inadequate physiologic function of the cortex of the presumably normal contralateral adrenal gland. Not infrequently, atrophy of varying degree has been observed at postmortem examination as well as at the operating table. The purpose of this report is to re-emphasize the frequent occurrence of such contralateral adrenal atrophy in association with a cortical adrenal neoplasm. Only comparatively recently has stress been placed upon this observation and its serious clinical significance realized, namely, the dire consequences imminent upon operative interference when such a condition existed. That such sequelae are not unusual, or, I should say, rather the rule, is borne out by many cases reported in the literature as well as by 2 of the 3 cases reported here (all examples of the so-called Cushing syndrome).

Read by invitation at the Annual Meeting of the Medical Society of the State of New York, New York City, May 8, 1940.

From the Mount Sinai Hospital, New York City

## Case Reports

**Case 1**—An Italian housewife, aged 34, first noticed three years before her death an increasing obesity that began about the hips and then spread upward involving the shoulder girdle and the face. Her friends remarked about the change in her facial expression, and coincidentally there appeared polydipsia and polyuria. One year before admission she was told that her blood pressure was elevated. The menses, which had been regular, ceased four months before admission. Sugar was detected in the urine on several occasions in the month before entering the hospital.

Physical examination on admission revealed a moderately obese woman with a protuberant abdomen and many purplish striae over the lower part of the abdomen and upper part of the thighs, the so-called buffalo facies, and hirsuties prominent on the upper lip and chin. The blood pressure was 170 mm of mercury systolic and 105 mm diastolic. A photograph taken before the onset of her illness when compared with one taken on admission showed that a remarkable transformation had taken place. X-rays showed marked decalcification of the entire skeleton. The calcium concentration in the blood was 9.7 mg per hundred cubic centimeters, the phosphorus concentration was 3 mg per hundred cubic centimeters. By perirenal air insufflation a plum-sized mass was outlined in the region of the right adrenal gland.

Operative interference was decided upon, and at operation both adrenals were exposed. A small atrophic adrenal was encountered on the left. On the right side a walnut-sized mass was enucleated from the right adrenal. It was found to be an adenoma of the cortex. Despite supportive therapy, which included eschatin, the patient went into deep shock the same night and died the next morning.

At autopsy, the right adrenal gland, the site of the resected adenoma, contained a hematoma in its lateral half and was grossly atrophic in appearance. The left adrenal was distinctly atrophic, weighing only 4.7 Gm with the perirenal fat. It was of average length but only about one-fifth the usual thickness.

Microscopic examination of both the right and left adrenals showed a striking narrowing of the cortex with an obliteration of distinct zones. The glomerulose layer was almost completely absent, the zona fasciculata and zona reticularis were poorly differentiated, and both showed the presence of considerable atrophy.

**Case 2**—A woman, aged 30, was admitted to the hospital complaining of weakness of both

legs and severe low back pain. She gave a history of amenorrhea of approximately seven months' duration. During the course of her illness, small purple striae had appeared in the abdominal wall, and a manifest tendency toward purpura hemorrhages in the skin had been noticed. She had observed increased fat deposits in the face and trunk, while, in contrast, her extremities had become thinner.

Physical examination disclosed a well-developed and well-nourished woman, whose abdomen, neck, and face were obese, but whose extremities were thin. The blood pressure was 170/120. There were numerous ecchymoses over the legs. There was a slight hirsuties of the face and neck. The clitoris was enlarged. X-rays revealed marked decalcification of all the bones. The blood calcium was 10.6 mg per hundred cubic centimeters, the blood phosphorus, 3.7 mg per hundred cubic centimeters. Perrenal air insufflation showed an enlarged adrenal on the left side.

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**Case 3**—A woman, aged 37, was admitted to the hospital with a history of onset of amenorrhea seventeen months before admission. Coincidentally, a papulopustular rash appeared on the face, arms, forearms, chest, and back, followed by the appearance of hair on the face and abdomen and by an increased growth of hair on the arms and legs. She gained over 30 pounds in a year, the added fat being distributed mostly on the trunk, thighs, buttocks, and breasts. Her voice became deeper and masculine in quality. About five months before admission her blood pressure was found to be 250 mm. mercury systolic. From this time on there was a gradual appearance of symptoms of diminished cardiorespiratory reserve, and ankle edema was noted.

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## Discussion

As has been mentioned in all 3 cases, the contralateral adrenal was atrophic. In the first case, even the adrenal from which the adenoma was removed showed a cortical atrophy. A fairly thorough search of the litera-

ture of the past fourteen years yielded 34 cases of adrenal cortical neoplasm in which the clinical observations upon the state of both adrenals were confirmed by autopsy. Seven (20.6 per cent) of these were adenomas, 27 (79.4 per cent) were carcinomas. Atrophy of the contralateral adrenal was encountered in 21 cases (61.7 per cent). The contralateral adrenal was absent in 2 cases. It is not unlikely that in these cases atrophy may have been so great that only after a diligent search could they have been found. In 1 case, as in the first presented here, there was bilateral adrenal atrophy, but in the case cited it was associated with a tumor of an accessory adrenal. The contralateral adrenal was recorded as "grossly normal" in 10 cases. In practically every one of these cases there was no report of microscopic confirmation of the gross observation. It is evident from the above figures that a majority of the cases of cortical adrenal neoplasm are associated with atrophy of the contralateral adrenal.

To explain the atrophy of the adrenal in these cases, the following hypothesis, which has been championed particularly by Walters and Kepler,<sup>3</sup> Cahill and Loeb,<sup>4</sup> and also Goldzieher,<sup>5</sup> seems a plausible one. It seems both possible as well as probable that the excessive secretion of adrenal cortical hormones by the actively growing tumor suppresses the function of the contralateral adrenal so that atrophy eventually ensues. Experimentally, this view is supported by the work of Ingle and Kendall,<sup>6</sup> who succeeded in producing atrophy of the adrenal cortex in rats by injection of massive doses of cortin. Wells and Kendall<sup>7</sup> more recently demonstrated that, of all the separable fractions so far obtainable from the

adrenal cortex, only corticosterone was capable of producing a significant degree of such atrophy.

Analogous observations have been made by others upon the effects of parathyroid adenomas, thyroid adenomas, and pancreatic islet adenomas,<sup>8</sup> in which instances, removal of the functioning adenoma has precipitated a temporary insufficiency in secretion of the related gland.

## Conclusion

If cognizance were taken by the surgeon of the frequency of adrenal atrophy in association with these neoplasms, the high mortality rate attendant upon operative interference might be considerably lowered, particularly if appropriate preoperative therapy (possibly in the form of desoxycorticosterone acetate and cortin as well as saline<sup>9</sup>) is instituted and also if these patients are not observed for too long a period after the onset of symptoms before operation is undertaken so that functional inactivation of the contralateral adrenal, if not actual atrophy, might be avoided.

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## LOGIC THAT LIMPS

Westchester physicians warn against an effort by compulsory health insurance proponents to promote their "nostrum" under the guise of a national defense measure.

An editorial in the *Westchester Medical Bulletin*, published by the county society, asserts that compulsory health insurance is being urged on the claim that "the examination of draftees has resulted in a large number of rejections for physical defects, that the health of the people generally is bad, that the health of the industrial population, upon which defense industry depends is especially bad, that health is necessary for defense, and that, therefore, we must have compulsory health insurance."

"The only thing the matter with this proposition is that the first three premises are completely untenable and the conclusion is absolutely unrelated to the premises," the editorial says.

It points out that the percentage of rejections of draftees is not high, relatively speaking, despite the fact that acceptance standards are considerably higher than in 1917, and that the vast bulk of the rejections are for defects of teeth, eyes, feet, or general nutrition which would not be affected by compulsory health insurance.

Statistics issued by the Metropolitan Life Insurance Company in January, 1941, are cited to show that death rates in the industrial population have improved faster than those of the population as a whole and that the industrial worker now enjoys as long a life as the average citizen.

The editorial inquires "Why is it necessary to attempt to justify compulsory health insurance upon such an irrelevant bogus proposition as this?" The answer given is "simply because even its most ardent supporters cannot make it stand on its own feet."

## Diagnosis

THIS new JOURNAL section carries case reports that have been made the subject of discussion from the point of view of the diagnostic process needed and the post-mortem evidence. All cases are selected because of some unusual interest. Two hospitals in this city supply this material, each six times a year. Reports from the New York Post-Graduate Hospital alternate with reports from Bellevue Hospital, Fourth Medical Division.—*Editor*

### CLINICOPATHOLOGICAL CONFERENCES

#### FOURTH MEDICAL DIVISION OF BELLEVUE HOSPITAL

##### History

The patient was a 54-year-old white woman who came to Bellevue Hospital by ambulance with a five-day history of fatigue and malaise associated with fever, chills, and sweats. Her physician had given her sulfathiazole without avail. A brother revealed that four weeks before admission she had become ill with chills and transient diarrhea after eating at the World's Fair. Past history revealed a two months' story of exertional dyspnea and recent digitalization by her physician for sub-sternal tightness, ankle edema, and epigastric pain. However, this medication seemed only to aggravate the cough, with expectoration of mucus. Patient denied hemoptysis or rusty sputum at any time.

On admission she appeared acutely ill and slightly cyanotic and was dyspneic and orthopneic. No jaundice was present. Her temperature was 102, pulse, 88, respirations, 28, and blood pressure, 85/50. The pupils were equal and reacted to light and accommodation. Extraocular muscles were intact, and sclerae were clear. There was evidence of coryza. The tongue was moist, and the pharynx was diffusely reddened. Her ears were normal. The trachea was in midline, no glands or enlargement were present in neck. An examination of the spine revealed no vertebral or costovertebral angle tenderness. Breasts were normal, glands were not palpable. Examination of the lungs revealed diminished resonance and diminished bronchovesicular breath sounds over the right base below posterior T<sub>7</sub> and anterior R<sub>5</sub>, with medium moist and dry crackling rales, on the left, medium moist and dry rales below posterior T<sub>7</sub> and anterior R<sub>5</sub>. Her heart was not enlarged, sounds were of good quality, and there was regular sinus rhythm. A soft blowing systolic was heard throughout. P<sub>2</sub> was greater than A<sub>2</sub>. The abdomen was distended and tympanitic but not tender, the liver was felt two finger-breadths below the costal margin. The

spleen was not palpable. Her reflexes were physiologic. The extremities showed no clubbing, but slight peripheral edema was present.

The patient's course of twenty-five days in the hospital was progressively downhill. The temperature was septic throughout, and, at first, she had relative bradycardia. On the second day after admission one observer found a thrombophlebitis of the right saphenous vein posteriorly. At about the same time, icteric sclerae were noted. Although the liver was palpable at that time, it was not tender. The chills during the third and fourth weeks were so severe as to necessitate intravenous morphine sulfate. Her case was treated as pneumonia, with no apparent alteration of course. On the twenty-first hospital day petechiae were observed in the left lower conjunctival fold, and a harsh blowing systolic was heard over the pulmonic area. The laboratory work-up is as noted below. In spite of transfusions, continuous therapy for congestive failure, and removal of 150 cc of serosanguinous fluid from the left chest, the culture of which was sterile, her toxic state became more progressive, and she died on the twenty-fourth hospital day.

The laboratory findings were as follows. Blood nonprotein nitrogen on admission was 36, blood sugar on admission was 98. Blood chlorides was 495.0. Blood Wassermann was negative. Routine urinalyses were negative except for 1 to 2 plus albumin and an occasional red blood cell, the specimen on the day following admission showed positive urobilinogen in 1:160 dilution. The red cell count on admission was 4,200,000 per cubic millimeter, with 90 per cent hemoglobin, falling to 2,040,000 with 56 per cent hemoglobin two days prior to death. The white cell count on admission was 3,800 per cubic millimeter, with 84 per cent polymorphonuclears, the white cell count was repeated the same day and showed 2,350 cells per cubic millimeter, with 76 per cent polymorphonuclears. Subsequent

white cell counts ranged between 7,100 and 12,150 per cubic millimeter. The differential counts were not remarkable. A blood smear taken the day after admission was negative for malarial parasites. During the last week the blood smear showed anisocytosis, slight hypochromia of the red blood cells, and toxic granules in the white blood cells. The icteric index fluctuated between 28 and 20, and the van den Bergh, direct, gave a delayed reaction and, indirect, gave a positive reaction. The blood culture was first reported positive on the seventeenth day of hospitalization, there being present 30 colonies of paratyphoid B group per plate. Two subsequent cultures on the twentieth and twenty-second days revealed 40 and 160 colonies per plate, respectively, of paratyphoid B group. A stool culture was negative for typhoid, paratyphoid, and dysentery groups. The agglutination tests were positive to a trace in 1:1,600 dilution of paratyphoid B group on several occasions. Sputum examinations were negative for pneumococci on two occasions. Roentgenogram taken on admission revealed a pneumonic consolidation over the lower lobe, left side. Subsequent examination twelve days later revealed extensive interstitial changes and fibrosis throughout the lower three-quarters of both lungs. Findings suggested chronic bronchitis and bronchiectasis. Electrocardiogram on the third day revealed PR, interval of 0.18 second, QRS—0.08 second, large P waves in lead II, sinus rhythm with right axis deviation, myocardial changes, and increased auricular activity. Another electrocardiogram two days prior to exitus showed atrioventricular rhythm with right bundle-branch block, occasional ventricular premature contraction, QRS—0.16 second.

## Discussion

DR HARRY A. SOLOMON. The predominant clinical features of this case on admission were those of congestive heart failure in an elderly woman who was a known cardiac of long duration. A double mitral murmur was present, and rheumatic heart disease, class 4, was diagnosed. Like so many other cases this patient's heart failure overshadowed other conditions that were found to be present as further observation progressed. Digitalis did not relieve the signs of myocardial insufficiency. It was necessary to explain the presence of a severe septic state with high temperature, chills, and fever, marked leukopenia, and jaundice—all of which were present on admission. Signs of consolidation were found in

the lower lobe of the right lung and were confirmed by x-ray examination.

Chemotherapy did not influence the fever or toxic state. In the presence of a pneumonia, leukopenia, and lack of response to sulfonamide therapy, the possibility of an atypical or virus pneumonia was considered. However, because the patient had received sulfonamides before coming to the hospital, the possibility of a leukopenia being due to the drug was mentioned, although the differential count did not suggest the characteristic neutropenia usually produced by the leukoplasmic depression by this drug. The jaundice was considered to be due to toxic hepatitis or possibly pulmonary infarction, especially inasmuch as the lungs in long-standing cases of mitral disease are favorable to the rapid change of hemoglobin into bilirubin.

The possibility of embolic instead of marantic infarction was considered because of the presence of saphenous thrombophlebitis and a hemorrhagic pleural effusion obtained when the chest was aspirated. Because of the severe and prolonged chills which appeared later, the question of liver abscesses opening into the hepatic veins also had to be excluded. Morphine sulfate intravenously used to control the chill and its debilitating effects worked almost instantaneously and most effectively. When the agglutination tests became positive for paratyphoid B and the blood culture was also positive for the same organism, it was possible, of course, to explain the entire picture on the basis of active bacterial endocarditis due to this organism.

Petechiae, increase in the chills and the highspiking temperature, the increasing number of colonies in the successive blood cultures, and the downhill course of the patient, all indicated the progressive character of the severe infection. The possibility that the pneumonic involvement was due to the same organism could not be established either from the sputum or from a culture of the pleural fluid. The question as to whether the pulmonary valve, as well as the mitral valve, was the seat of active bacterial vegetation was considered because of the appearance of a murmur over the pulmonary area and the changing lung signs.

When the history of diarrhea, which was present for one month prior to admission, was subsequently obtained, the sequence of events could be easily correlated. The source of the infection was in the food ingested at the World's Fair, and the portal of entry was, therefore, through the intestinal tract with

subsequent development of bacteremia and, finally, development of bacterial endocarditis due to paratyphoid B

DR. CHARLES H. NAMMACK Before the blood culture was reported positive, the striking signs of bradycardia and leukopenia led us away from the diagnosis of bacterial endocarditis. The late Dr. Van Horn Norrie stated that bacterial endocarditis was never present in a patient who had a pulse rate below 100.

DR. SOLOMON. Hemorrhagic chest fluid raised the question of paratyphoid pneumonia.

DR. NAMMACK The first chest plate looks like a pericardial effusion.

DR. SOLOMON This was a portable plate and taken before the patient was adequately digitized.

DR. MENNASCH KALESTEIN I understand that the Department of Health recently reported several other cases of paratyphoid B infection, possibly originating from the World's Fair.

DR. EMANUEL APPELBAUM It is important to recall that paratyphoid gives rise to two distinct disease entities—(a) acute food poisoning or gastroenteric form, and (b) typhoid form. The former may be of mild nature but, at times, severe and fulminating in character. The latter presents a clinical picture like that of typhoid fever, except of milder degree usually. It should be pointed out that lesions in the small intestine are much less common in paratyphoid fever than in typhoid fever. The importance of paratyphoid carriers must also be borne in mind.

DR. LOUIS F. BISHOP, JR. The terminal auriculoventricular block raises the question of its etiology. In cases of progressive heart failure it is not necessary to assume any organic basis for this. It may be due entirely to ischemia. However, we have recently had a case where the vegetation ulcerated through the interventricular septum giving rise to interventricular block.

### Presentation of Pathology

Primary	Acute bacterial endocarditis (paratyphoid B group— <i>Cholera suis</i> , <i>Salmonella supestifer</i> )
	Rheumatic heart disease

### Secondary

Heart	Hypertrophy and dilatation Buttonhole mitral stenosis
Lungs	Chronic passive congestion Acute edema and congestion
Spleen	Chronic passive congestion Infarct
Uterus	Fibromyomas
General	Conjunctival petechiae Icterus Edema of lower extremities

DR. DAVID M. SPAIN Postmortem examination showed a tight mitral stenosis with a marked calcification. On the auricular surface of the anterior mitral leaflet there was a grayish pink, friable, flat vegetation which partly ulcerated the valve. The vegetation was  $\frac{1}{2}$  cm in thickness and  $1\frac{1}{2}$  cm in diameter. The spleen showed one infarct. There were no intestinal lesions present, and nothing else was found that might be associated with a paratyphoid B group infection.

Microscopic examination revealed a vascularized, fibrosed, and calcified mitral upon which was superimposed a thrombotic mass of fibrin, polymorphonuclear leukocytes, and lymphocytes.

Postmortem bacteriologic studies revealed pure cultures of paratyphoid B group (*Cholera suis*) from heart blood, bile, and the center of the vegetation.

There have been previous reports of somewhat similar cases in the literature. Kretschmer reported a case in 1935 of paratyphoid B mitral endocarditis without intestinal lesions. H. G. Wells in 1936 reported another case in which the only additional finding was some grayish pigmentation of Peyer's patches. Longcope in 1905 reported a fatal case of acute paratyphoid B septicemia in which there was neither endocarditis nor intestinal lesions. Most likely the paratyphoid organism entered the body through the intestinal tract during the acute episode of food poisoning. What the pathogenesis was from this point on is open to speculation.

Another interesting finding as a result of sulfadiazine therapy was the presence of numerous, small, yellow, crystalline deposits in the minor calices of the kidney. These crystals were identified as belonging to the sulfadiazine group.

### INSIDE INFORMATION

Friendly Susie—"Had you heard that Jane is engaged to an x-ray specialist?"

Jealous Fannie—"Well she's lucky. Nobody else could see anything in her"—*III Med J*

# 1941 Annual Meeting

## Make Your Reservations Now

### Buffalo Hotel Rates

Hotel and Location	Room Capacity	Single Without Bath	Single with Bath	Double Without Bath	Double with Bath	Twin Beds
Buffalo, Washington and Swan	450		\$2 00 2 50 3 00		\$3 00 to 5 00	\$4 00 to 6 00
Ford, 210 Delaware Ave	750	\$1 50 1 75	1 50 up	\$2 50 2 75	3 00 to 5 00	3 00 to 5 00
Graystone, 24 Johnson Park	150	1 50 up	2 00 up	2 50 up	3 00 up	3 50 up
Lafayette, Washington and Clinton	420	2 00	2 50 up		4 00 up	4 50 up
Lenox, 140 North Street	200		2 50 up		4 00 up	5 00 up
Statler, Niagara Square	1,100		3 00 up		5 00 up	6 00 up
Stuyvesant, 245 Elmwood Avenue	450		2 50 up		3 50 up	5 00 up
Westbrook, 675 Delaware Avenue	312		3 50 up		5 00 up	6 00 up
		Single with Connecting Bath		Double with Connecting Bath		
Touraine, 274 Delaware Avenue	300	\$1 50	2 00 up	\$3 00 up	3 50 up	4 50 up

#### FRACTURE DAY—BUFFALO COMMITTEE, AM COLLEGE OF SURGEONS

The first annual fracture day of the Buffalo Fracture Committee of the American College of Surgeons will be held on May 2—the day following the annual State Society meeting. The program will be devoted to the discussion of fractures and other traumas. It will begin at 9 00 A.M. and will take place in the Children's Hospital Auditorium, 235 Bryant Street, Buffalo. A cocktail hour, followed by dinner, will be held at the Buffalo Club, after which there will be a discussion of the papers presented throughout the day. Dr Robert P. Dobbie is chairman.

#### NATIONAL GASTROENTEROLOGICAL ASSOCIATION—ANNUAL CONVENTION

The sixth annual convention of the National Gastroenterological Association will be held on May 13, 14, 15, and 16 at the Commodore Hotel in New York City. Members of the medical profession are cordially invited to attend. Dr Henry Kendall, of New York City, is chairman of the scientific program committee. A committee of ladies is arranging an interesting program of social activities for the families and friends of the visiting members. Mrs. Anthony Bassler, of New York City, is chairman of this committee.

# Medical News

## County News

### Albany County

Dr Foster Kennedy, of Cornell Medical College, New York City, addressed the county society on March 26 on "Science, Civilization, and Faith." Dr Kennedy discussed the effect upon the scientist of the Nazi rise to power, as well as the duty of the scientist to the people in this international crisis. Discussion was opened by Dr R. S. Cunningham (by invitation).

Dr H. L. K. Shaw, 67, of Albany, who died on March 26, was a prolific writer on child health and disease. Dr Shaw also translated, from the German, Pfaundler and Schlossman's seven-volume *The Diseases of Children*. In 1914 he wrote the first baby book distributed by the State Health Department, *Your Baby—How to Keep It Well*.

Author of other scientific pamphlets, Dr Shaw was an advisory editor and writer for *Parent's Magazine*, editor of the happy child department of *Delinicator* magazine and a frequent contributor to the *New York Herald Tribune*, on whose advisory council he served.

He also was author of *The Happy Child*, 1924, *The Young Child's Health*, 1925, and *Communicable Diseases in Children*, 1927.

Dr Shaw was American delegate to the International Medical Congress at Lisbon, Portugal, in 1906, and at various times was president of the American Pediatric Society, the American Child Hygiene Association, the Central New York Pediatric Club, and the Albany County Medical Society. Former President Hoover succeeded him in the child-hygiene post.

### Chautauqua County

Dr William G. Farlow, of Rochester, spoke on the modern treatment of the putrid lung abscess at the meeting of the county society on March 19 at the Hotel Jamestown. Dr Ernest J. Kelley, Jr., presided.

Army authorities have revoked the order calling Dr Robert X. Williams, of Clymer, to active service. Eight hundred persons signed a petition asking that Dr Williams be permitted to stay with his practice, as the nearest doctor was ten miles away, at Panama.

### Chemung County

Rheumatic fever and its resulting heart diseases are the great causes of death between the ages of 5 and 15 in New York City, Dr Katherine Dodge, associate professor of pediatrics, Bellevue Medical School, New York City, told the county society on March 12 at the Mark Twain Hotel in Elmira.

Approximately 50, including doctors from vicinity towns, attended the event which opened with dinner.

Dr Dodge, whose topic was "Rheumatic Fever and Allied Diseases in Children," stressed the value of regular physical examinations and the need for training to detect the disease in its early stages.

Dr George R. Murphy, president of the medi-

cal society, conducted the session, the third in a series of six scheduled postgraduate lectures on pediatrics. The next meeting, April 9, featured a talk on "Growing Feet of Children," by Dr R. Plato Schwartz, professor of orthopedics at the University of Rochester.

A proposal that the city of Elmira relieve city physicians of medical care of nonhospital welfare patients, allowing the patients to go to doctors of their choice was made to the City Council on March 10 by Dr George R. Murphy, president of the county society.

"The society suggests that better care will be given and hospitalization will be less and more money saved for the taxpayer by abolishing those duties of the city physician which entail giving medical care to the city welfare clients," Dr Murphy said. "Further savings will result because such medical care will be reimbursed by the state to 40 per cent. The patients would go to the doctor of their choice."

Dr Murphy also suggested that the city make an annual appropriation of \$10,000 for the medical society in recognition of the services of staff physicians of the two Elmira hospitals in caring for welfare patients without pay. A similar request was made of the Board of Supervisors.

The money would be used by the society to increase medical welfare of the community by scholarships, lectures, and improving the medical library.

The society believes that the \$10,000 would be saved to the taxpayer by better medical care if a proposed change in the medical relief setup is adopted.

Dr. Murphy asked that supervisors consider construction of a building to house a centrally located county laboratory, larger and more adequate dispensary for clinics—orthopedic, dental, social hygiene, prenatal, child welfare, toxoid, and mental—and better offices for the city health officer.

### Dutchess County

The county society has endorsed the Medical Expense Fund, of New York City, and it is expected that a campaign for membership will be started.

At the meeting of the society on March 12, the speaker was Dr Thomas J. Kirwin, senior attending surgeon at New York Hospital. He spoke on "Hematuria."

Dr Edgar Powell, of Fishkill, vice-president of the society, presided in the absence of Dr James T. Harrington.

About 75 members attended.

### Errie County

Establishment of a municipal "blood bank" by the Buffalo City Health Department, intensified public education on the need for prenatal care, conservative treatment of toxemias of pregnancy, and better hospital control of cesarian operations were among the recommendations made on March 17 by the obstetric

council of the county society for reducing the maternity death rate

The council's report, read at the society's meeting in Hotel Statler by Dr Edward P Forrester, chairman, showed that there were 43 deaths in 10,548 deliveries in 1940

Emphasizing that 7 deaths resulting from hemorrhages might have been saved by early transfusions, Dr Forrester urged that hospitals not having one already establish a "blood bank" and that the city health department also make one available to physicians in home cases

To counteract the "slurs" made on the medical profession recently, Dr Carlton E Wertz, former president, read into the society's record a resolution summarizing what the profession has done so far toward national preparedness

The society voted in favor of changing its meeting date from the third Monday of each month to the fourth Tuesday

Arrangements have been made to give a dinner to the state and Federal legislators

A plan of health and accident protection approved by the Insurance Committee and Comitia Minora was adopted.

Through this plan the society is able to make available valuable disability protection to members on a basis not obtainable individually

The Association of Family Physicians met at the Buffalo Athletic Club on March 25 The speaker was Dr M A Hershey

The Buffalo Academy of Medicine met on March 19 at the Museum of Science and listened to a paper on "The Patent Ductus Arteriosus and Its Surgical Treatment," by Dr Robert E Gross, Peter Brent Brigham Hospital and Children's Hospital, Boston, with discussion by Drs Werner J Rose and Leon J Leahy

On March 26, the academy heard an address on "Pitfalls in the Diagnosis of Undulant Fever by Laboratory Methods," by Dr Walter M Simpson, Kettering Institute for Medical Research, Miami Valley Hospital, Dayton, Ohio

On April 2, Dr Francis J Carr, associate surgeon, Ruptured and Crippled Hospital, New York City, spoke at the academy on "Orthopedic Conditions Met with in General Practice"

On April 9, the academy heard an address by Dr Chester F Keefer, of Boston, on "Causes of Obscure Fever"

The following have been nominated for office for the 1941-1942 session of the Buffalo Academy of Medicine president, Dr George E Slotkin, secretary, Dr A. Wilmot Jacobsen, assistant secretary, Dr Clyde A Randall, treasurer, Dr William F Jacobs, and trustee, Dr Frederick T Schnatz

The next meeting of the Medical Society of the County of Erie will take place on April 21 in the Hotel Statler at 9 00 P M

Dr Clifford Rispin Orr, 74, of Buffalo, who died on March 15, had been director of roentgenology at the Edward J Meyer Memorial Hospital the last 22 years and was professor of radiology in the University of Buffalo Medical College.

Dr Wayne J Atwell, 51, head of the department of anatomy of the University of Buffalo Medical School, died on March 27

### Fulton County

Dr Porteous Johnson, attending surgeon at the New York Post-Graduate Hospital, spoke before the county society on March 7, in the Eugene Littauer Memorial Laboratory, on "Fractures of the Humerus and the Femur"

Dr Walter Ludlum, Jr, of New York City, attending surgeon at the New York Post-Graduate Hospital, addressed the county society at the Eugene Littauer Memorial Laboratory, on March 21, on "Care of Fractures of the Forearm and Leg"

### Jefferson County

The regular monthly meeting of the county society was held on March 13 at the Black River Valley Club Dinner was served at 6 30 The program was devoted to a discussion of "Alcoholism"

The speaker was Dr Eugene Boudreau, professor of neuropsychiatry at Syracuse University

### Kings County

The following scientific program was presented at the meeting of the county society on March 18 (a) Address—"The Selection of Operation for Prostatic Obstruction," by Dr Reed M Nesbit, Ann Arbor, Michigan, (b) Address—"American Health and National Defense," by Dr Nathan B Van Etten, Bronx, New York.

The society adopted resolutions disapproving proposed state recognition of chiropractic and the city department of health's proposal to collect a \$1 00 fee from physicians for premarital serologic tests and use the resulting revenue for the building of an experimental laboratory

Dr Van Etten, president of the A.M.A., urged mobilization of all health agencies for national defense and creation of a Federal Department of Health but warned against "surrender of the practice of medicine to government control"

Pointing out that Senator Robert A Taft and Federal Security Administrator Paul V McNutt are among the prominent government officials who have indorsed the addition of a Secretary of Health to the President's Cabinet, he urged

"Let physicians take the leadership for which their education qualifies them—let them emerge from their conservative shells and demand sane and progressive action for better conditions of medical service, and let them educate all the people in their own communities and ask their cooperation in developing a sound program for American health"

The county society has launched a drive for funds for a new building

The Brooklyn Thoracic Society met on March 21 with a program devoted to "Gastrosopic Examinations" and "Surgical Treatment of Carcinoma of the Esophagus"

### Monroe County

The county society endorsed the proposed Rochester meat inspection ordinance at the meeting in the Academy of Medicine on March

18, holding that the "consumer public is entitled to that adequate protection."

At the same time, the society backed the "splint-them-where-they-lie" educational program sponsored by the Red Cross and public and civic safety groups and also approved continuation of Sunday afternoon lectures in co-operation with the Academy and the University of Rochester Medical School.

Commendation of the cooperation of the Pharmaceutical Association in 150 city and county drugstores in the antiseif-medication campaign was voiced by Dr Benjamin J Slater, public health chairman. Reports from physicians show favorable results, particularly in treatment of gonorrhea and syphilis, he said.

Dr Abraham H Aaron, University of Buffalo Medical School faculty member, recounted results of a survey of 3,000 Erie County prescriptions and offered suggestions as to means of assuring "tailor-made doses."

Dr Clarence P Thomas, medical defense chairman, reported that 234 physicians, half the society's membership, are voluntarily donating services as selective service examiners.

A maternal welfare teaching day was conducted at the University of Rochester School of Medicine on April 9. The subjects presented included "Blood Plasma, Transfusions, etc.", "Analgesia", "Treatment of Posterior Positions", "Episiotomy", "Emergencies of the Third State of Labor", and "Breech Delivery." At the Rochester Academy of Medicine at 8 45 Dr Ferdinand J Schoeneck, assistant professor of clinical obstetrics, Syracuse University, spoke on "Normal Labor, Sepsis, and Intercurrent Diseases."

#### Nassau County

The scientific program at the meeting of the county society on March 25 was as follows: "Direct Supravascular Extrapertoneal Cesarean Section." Illustrated by slides and natural color motion pictures. The speakers Dr Raymond J Pier, Memorial Hospital, Syracuse, and Dr Francis R. Irving, Memorial Hospital, Syracuse. Discussion was opened by Dr Edward G. Waters, Margaret Hague Maternity Hospital, Jersey City.

Splendid cooperation has been shown by Nassau County physicians in response to the law which went into effect on January 1, 1940, making cancer a reportable disease, we read in the *Nassau Medical News*.

During this first year, 1,133 cases of cancer were reported among county residents—a rate of 278.5 per 100,000 population. An interesting analysis of these cases has been made by Dr Earle G. Brown, Commissioner of the Health Department. With his permission, a summary is presented here.

There were 502 cases reported in males and 631 in females. However, if we exclude all cases peculiar to only one sex, the totals are nearly the same: males, 418 and females, 443.

The primary location of the new growth in the 1,133 cases are reported as follows: oral cavity and pharynx, 84, digestive tract and peritoneum, 297, respiratory system, 64, uterus, 143, other female genitalia, 45, breast, 176, male genito-

urinary tract, 90, skin, 124, bone, 30, other and unspecified organs, 80.

The fourth annual cancer institute was held on March 31 at the Rockville Country Club. At the luncheon the speakers were Mrs Walter T. Loebmann, "The Educational Program of the Nassau County Cancer Committee", and Dr Eugene H. Coon, "Cancer Education in Secondary Schools in Nassau County."

At the afternoon session (225 men and women attended) Dr Francis Carter Wood spoke on "Recent Advances in the Field of Cancer Research", Dr Eugene F. Traub, on "The Prevention and Early Treatment of Cancer of the Skin", and Dr Arthur C. Martin on "The Care of the Nassau County Cancer Patient."

A total of twenty-seven Nassau county doctors, including seventeen members of the medical society, have been assigned to active military duty, it is announced.

#### New York County

The scientific program of the county society at its meeting on March 24, was as follows: (1) "The Ballistocardiograph: A New Method for the Detection and Investigation of Disease of the Heart and Circulation—Results Obtained in the Commoner Clinical Conditions," by Dr Isaac Starr, University of Pennsylvania School of Medicine, Philadelphia, by invitation, (2) "Some Tests of Pulmonary and Circulatory Function—Their Application in Clinical Diagnosis and Treatment," by Dr Dickinson W. Richards, Jr., and Dr Andre Courmand, Presbyterian and Bellevue hospitals, by invitation, discussion—Dr Henry A. Schroeder, by invitation, Dr Hilbert A. Ranges, by invitation, Dr Max Pinner, by invitation.

Professor Walter J. Meek, of the University of Wisconsin, addressed the Harvey Society at The New York Academy of Medicine, on March 20, on "Cardiac Effects of Inhalant Anesthetics."

The section of ophthalmology of The New York Academy of Medicine discussed "Tumors of the Eye and Adnexa" at the meeting on March 17.

A combined meeting of the sections of medicine and surgery of The New York Academy of Medicine was held on March 18, and papers were read and discussed on various phases of hypertension.

A symposium on postoperative complications was presented before The New York Academy of Medicine section of genitourinary surgery on March 19.

Instead of the regular meeting of the section of otolaryngology at The New York Academy of Medicine, the section held a combined meeting with the section on otolaryngology of the College of Physicians of Philadelphia, at their building in Philadelphia, on March 19.

The New York Roentgen Society met on March 17, and listened to papers on tuberculosis of the breast, radium dosimetry, contact therapy, and cancer of the larynx.

The New York Academy of Medicine section of obstetrics and gynecology met on March 25,

and heard addresses on fracture of the femoral neck following roentgen therapy for gynecologic malignancy, and the theca-interna cone and the ascensus of the Graafian follicle

The New York Pathological Society, at its March 27 meeting, discussed tumors of the eye and histological changes produced in squamous cell epitheliomas of the mouth and oropharynx by fractionated external irradiation

New York's women doctors are again renewing their efforts to be classed as eligible for the Medical Reserve Corps of the Army and Navy. The Women's Medical Association will present a resolution to the county society asking that a recommendation of military status for their group be forwarded to the House of Delegates of the Medical Society of the State of New York.

The issue is expected to come up for a vote at the April meeting of the county society, and, if acted upon favorably, it will be laid before the House of Delegates of the American Medical Association at its annual meeting in Cleveland in June.

#### Oneida County

Dr T P Magill, of Cornell Medical College, New York City, addressed the Utica Academy of Medicine on "Influenza" on March 20. Discussion was opened by Dr T Douglas Kendrick. Dr Duncan Whitehead read a paper on "Aviation Medicine."

#### Ontario County

Under the topic, "Mental Hygiene in Panama," Dr C Harvey Jewett addressed the Canandaigua Medical Society on March 14 in the Canandaigua Hotel. Dr Charles J Bobeck was host, with dinner served to 11 members and a guest, Dr G J Winthrop. Dr H K. Meyers, president, presided.

#### Otsego County

The March meeting of the county society was held on the twelfth at the Hotel Oneonta. Following dinner and a brief business session, the first of the 1941 postgraduate lecture series was given by Dr A F R. Andresen, professor of clinical medicine at Long Island University Medical School, on the topic "Dietary Therapy in Gastrointestinal Diseases." Other lectures are April 9, "The Diabetic Patient and the General Practitioner," Dr Milton B Handelsman, associate in medicine, May 14, obstetrics, Dr Mervyn B Armstrong, assistant clinical professor of obstetrics and gynecology, and June 11, "Some Problems in Cardiac Diagnosis," Dr J Hamilton Crawford, professor of clinical medicine.

#### Queens County

The county medical society met with the county bar association on March 25. The program was "Trauma and Neurological Medicolegal Problems," Dr George I Swetlow, consulting neurologist to Cumberland Street Hospital, assistant neurologist to Caledonian Hospital, associate, Peripheral Anesthesia, Beth-El Hospital. Discussion—Dr Raphael Lewy, chief medical examiner for the State Industrial Commission, and Harry I Huber,

Esq., counsel to the Medical Society of the County of Queens, Inc., Remarks by Joseph Conroy, Esq., president of the Queens County Bar Association.

The Friday afternoon talks in April are April 4, 4 30 P M—"Granulomas and Adenopathies," by Dr Meyer Rabinowitz, physician, Jewish Hospital, consulting physician, Greenpoint Hospital, April 18, 4 30 P M—"Applied Neurology for the General Practitioner," by Dr Foster Kennedy, physician-in-charge, neurology, Bellevue, consultant, Neurological Institute, New York, Lenox Hill, and Women's hospitals.

#### Rensselaer County

The treatment of pneumonia and the progress made in recent years toward reducing its death rate was discussed by Dr Maxwell Finland, chief of the pneumonia service at Boston City Hospital, in addressing the county society on March 11 at the Hendrick Hudson Hotel.

#### Richmond County

The regular monthly meeting of the county society was held on March 12, in the auditorium of the Richmond Borough Health Center.

After a short business meeting, the scientific program was introduced. The president, Dr Herbert A Cochrane, invited Dr John H Mulholland, assistant dean of New York University, School of Medicine, to present a talk at this meeting. Dr Mulholland's topic was "Intern Education." Professor Clarence C Stoughton, of Wagner College, Staten Island, spoke on "The Work and Importance of the Staten Island Community Chest." A third speaker was Dr Herman Friedel, a member of the society, who spoke on the "Work of the Staten Island Cancer Committee."

A Radio Committee is being formed.

#### Schenectady County

The county society met at the Glenridge Sanitarium on April 1 and heard an address by Dr J Maxwell Chamberlain, principal thoracic surgeon at the State Tuberculosis Hospital, Homer Folks Hospital, at Ray Brook and Oneonta, and consulting thoracic surgeon at the Schenectady County Tuberculosis Hospital, on "Recent Advances in Thoracic Surgery."

Physicians from Schenectady and Scotia are giving lectures on first aid before Legion posts for use in possible emergency.

#### Steuben County

Corning was host to the April meeting of the county society, held at the Baron Steuben Hotel on April 10.

Papers were given by two Syracuse physicians who were on the program for the November meeting, but were prevented from coming by a bad storm.

They were Dr John C M Brust, on the subject, "Diagnosis and Management of Common Ano-Rectal Diseases," and Dr John Asever, "Organization of a Plasma and Blood Transfusion Service in the Syracuse University Medical Center."

## Yates County

Members of Yates County Welfare Department and county society have appointed a joint committee, consisting of representatives from each group to study the costs of medical care for Yates County indigents. Consideration will be

given to adoption of a local medical plan that will meet approval of the New York State Department of Welfare and will eliminate several unsatisfactory features that under the present setup call for prior approval of the state group on many items.

## Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
Wayne J Atwell	51	Buffalo	March 27	Hamburg
Claude A Burrett	62	Cleveland Hom	March 3	Manhattan
Edward K Cravener	42	Ohio State	March 27	Schenectady
Marian E Fischer	42	W M C Pa	February 20	Buffalo
George A Gillette	55	Harvard	February 21	Manhattan
Andrew J Gilmour	70	P & S N Y	March 9	Manhattan
Frank Hinkley	66	Albany	March 10	Brightwaters
George A. Hull	71	N Y Hom	March 18	Manhattan
Alexander L Johnson	80	Albany	February 27	Gloversville
Thomas J Kearns	59	Cornell	March 19	Manhattan
Charles G McGaffin	58	Albany	March 26	Brooklyn
Archibald W Moss	44	L I C Hosp	March 16	Binghamton
Thomas A. Mulcahy	64	P & S N Y	March 3	Bronx
Clifford R Orr	74	Buffalo	March 15	Buffalo
Adolph G Rave	70	Louisville	March 27	Hicksville
Vittorio Ruscato	57	Catania, Italy	December 17	Manhattan
Harry A. Sadden	58	Syracuse	March 22	Rochester
Henry L K Shaw	67	Albany	March 26	Albany
Charles W Stickle	70	N Y Univ	March 8	Brooklyn
Charles Telsey	49	L I C Hosp	March 1	Utica
Frank G Young	59	N Y Hom	March 25	Brooklyn

## SCIENTIFIC SESSION—AMERICAN ACADEMY OF PHYSICAL MEDICINE

The American Academy of Physical Medicine will hold its Nineteenth Annual Meeting and Scientific Session on April 28, 29, 30, 1941, in New York City, with headquarters at the Hotel Pennsylvania, where lectures, symposiums, clinical papers, motion pictures, and exhibits will be presented. Clinics will be held at the Medical Center, New York Orthopedic Hospital, Post-Graduate Hospital, and the Skin and Cancer Hospital. There will be an evening session at The Academy of Medicine Building and a banquet at the Hotel Pennsylvania.

Physical medicine in relation to general medicine and the specialties will be the underlying theme of the topics under discussion. These include new developments in electrotherapy, electrosurgery, radiation therapy, hydrology, physical education, military medicine, aviation medicine, and laboratory reports on related investigation.

The sessions are under the direction of Harold D Corbuser, M D, Plainfield, New Jersey, president, Herman A Osgood, M D, Boston, secretary, Fred H Albee, M D, New York City, chairman of the Committee on Arrangements, William D McFee, M D, Boston, chairman of the Committee on Program, William Benham Snow, M D, New York City, chairman of the Committee on Clinics, Franklin P Lowry, M D, Newton Massachusetts, chairman of the Committee on Exhibits, and Robert S Harris, Ph.D, Cambridge, Massachusetts, chairman of the Committee on Research.

All members of the medical profession and those of related interest are invited to attend the scientific program. There will be no registration fee.

Address inquiries to Herman A Osgood, M D, secretary, 144 Commonwealth Avenue, Boston, Massachusetts.

## Workmen's Compensation Fee Schedule—Multiple X-Ray Fees

The Industrial Commissioner on March 12, 1941, promulgated the following revision of the Fee Schedule affecting multiple x-ray examinations by physicians authorized under the Workmen's Compensation Law to examine and treat compensation claimants. By agreement, this revision will affect all bills not paid on November 15, 1940, and thereafter. It is to be noted that this revision applies to multiple x-ray examinations made at one time.

"X-rays of multiple injuries or parts shall be charged as follows

"(a) For two contiguous parts, the charge shall be the greater fee plus 50 per cent of the lesser fee

"(b) For two remote parts, the charge shall be the greater fee plus 75 per cent of the lesser fee

"(c) For three or more parts, whether contiguous or remote, the charge shall be the greatest fee plus 75 per cent of the total of the lesser fees

"(\*) There shall be no charge under this formula for x-rays of two or more parts or regions included in any line item of the minimum fee schedule

"No charge shall be made for comparative x-rays except when such x-rays are specifically authorized by the carrier or industrial commissioner. Comparative x-rays specifically authorized shall be subject to fees for contiguous and remote parts as provided in this formula."

It should be noted that paragraph (\*) of the new schedule means that there shall be no charge under this new schedule where the old schedule already allows a discount for more than one part, as for example

Items 889, 890, 1089, 1089-a, 1230, 1231—thus, if a head and face (875) and two spinal regions were x-rayed by a physician with a rating of "SD," the regular fee for the examination of the head, \$20, would be paid and item 889, or \$25, for the two spinal regions, a total of \$45. Item 889 is already discounted and, therefore, not affected by the new rule. If, however, a head and face and cervical spine (884) were x-rayed, the head fee of \$20 would be paid in full, being the greater part, plus one-half of item 884, this being a contiguous single part and not already discounted as in item 889.

If a head and one lumbar region (886) were x-rayed, the full head fee would be paid plus three-fourths of the lumbar region fee, since this is a remote part and not a contiguous one.

If the head were x-rayed and the cervical and thoracic spine, the full fee for the head would be paid plus item 889 for two spinal regions, or \$25, making a total of \$45.

If a head were x-rayed and, at the same time, if an x-ray of the chest and of the humerus were taken, the head or greatest item would be paid in full, and three-fourths of the total of the other two items would be paid, according to the new schedule.

DAVID J. KALISKI, M.D.  
*Director*

March 19, 1941

## NEW YORK STATE DIETETIC ASSOCIATION

The New York State Dietetic Association will hold its annual convention at the Hotel Statler, Buffalo, New York, May 1 and 2. The trend of the entire program will be national defense covering community education, surplus food problems, and newer trends in nutrition. The afternoon of May 2 will be given over to a panel discussion of the defense problem with the following representatives of specific fields partic-

ipating: Miss Gladys Cram, Buffalo, Visiting Nurse Association; Miss Ethel Coan, Buffalo, Home Economics Association; Miss Blanche Bohach, Rochester, Dietetic Association; Miss Lenna Cooper, New York City, Hospital Dietitian; Mame T. Porter, Albany, Home Economist in Social Work; and Mary Switzer, Buffalo, Home Economist in Extension Work.

# Woman's Auxiliary

## To the Medical Society of the State of New York

WE ALL hope to meet for the convention in Buffalo. Let our motto be—Erie County here we come—100 per cent strong!

### County News

**Cayuga.** A business session and bridge tea was held at the home of Mrs. Everet Wood, of Auburn. Because of bad road conditions the February meeting was postponed.

**Erie.** Aside from convention preparations and business sessions, the Erie County Auxiliary finds time to entertain the medical society at a Wisteria Ball at the Hotel Statler, April 19. All decorations have been created and contrived by auxiliary members. This event promises to be an outstanding affair. Mrs. Allen E. Richter and Mrs. Wm. Rennie are the chairmen.

**Fulton.** Mrs. J. Edward Grant, of Northville, was elected president at the annual meeting which convened in March. The following officers will assist her: president-elect, Mrs. John A. Shannon, Johnstown, first vice-president, Mrs. Claude Bledsoe, Gloversville, second vice-president, Mrs. Richard Furlong, Gloversville, recording secretary, Mrs. Francis Hyland, Gloversville, corresponding secretary, Mrs. Frank G. Calder, Johnstown, and treasurer, Mrs. Vernon R. Ehle, Gloversville. Three directors chosen are Mrs. George Lenz and Mrs. Leslie Backus, Gloversville, and Mrs. Frederick Sarno, of Johnstown. Two new members, Mrs. Joseph J. Thompson and Mrs. Samuel Russell, of Gloversville, were accepted. The retiring president, Mrs. Burlin G. McKillip, was presented flowers in appreciation of her work as head of the group for the past year.

**Kings.** The sixth anniversary of the group was celebrated at La Guardia Field by holding a special luncheon party. Mrs. Louis Harris, president of the organization, welcomed the guests. Mrs. Samuel Zwerling was chairman. After the luncheon the party was taken on a tour through the hangars.

**Montgomery.** At the March meeting Miss Mildred Constantine, superintendent of the City Hospital, spoke on group hospitalization. She told of the benefits of this plan to the patient and doctor and stressed other matters pertaining to the welfare of the hospital. To date there are forty-four members enrolled. Real enthusiasm has been shown by this auxiliary.

**Nassau.** Mrs. William Burke introduced Dr. Charles Bove, former chief surgeon of the American Hospital in Paris, who was the guest speaker at a recent meeting at the Nassau Hospital auditorium in Mineola. His subject was "Civilian Defense in Time of War." He mapped out a practical program for a medical unit auxiliary. During March, Mrs. A. C. Martin was proud to present to the interest of her auxiliary the well-known surgeon, Dr. J. F. Erdmann of the Post-Graduate Hospital. He reviewed his experiences in the practice of medicine over a half century. New members added to the roster were Mrs. A. Fincke, of Garden City, Mrs.

Thomas Biondo, of Freeport, and Mrs. S. A. Dallgaard.

**Oneida.** Dr. Moses M. Bragg, historian, tells us that the Oneida County Medical Society was formed from a quota of "Twenty-nine Medical Gentlemen," in Rome, in 1806. With this in mind and after much thought and inquiry, forty-one wives of Medical Gentlemen met in the Hotel Utica, Utica, on October 3, 1940, and formed the Women's Auxiliary of the Oneida County Medical Society. The present membership is eighty-seven. Mrs. Neil D. Black reports "January—following a business meeting, delightful informal talks were made by Mrs. J. J. Buettner and Mrs. E. Neptune, of Onondaga County, at a luncheon meeting February—There were forty-eight members present at a luncheon and short business session. Mrs. J. I. Farrell, president, introduced Mrs. A. Van der Veer, Jr., who in her usual charming manner interested the audience in medical legislation March—A dessert party was followed by a talk on nursing as a defense factor by Miss Stella Jenkins. Mrs. F. B. Lee emphasized the importance of the Red Cross, and Mrs. I. Fitzsimmons told of what nutrition means in building up the strength of the nation. Delegates to the state convention are Mesdames J. I. Farrell, A. Sloan, and F. M. Miller. Our meetings have been pleasant socially and interesting and instructive mentally. From each one we have learned something of medical history, foreign affairs, or facts of national importance. While we are yet too young to have reached our big objective, we feel we have accomplished something in getting to know one another. And in time, as our membership grows and interest increases, with the help of our advisors we will find our niche of usefulness in the community. Oneida County will be proud of its Women's Auxiliary."

**Queens.** A successful testimonial dinner was tendered to Mrs. L. H. Kice, state president, at the Forest Hills Inn. On this occasion the guest of honor delighted her audience with an interesting address. An additional program was provided by Miss Charlotte Wilkinson through the courtesy of R. H. Macy and Co., her topic was "Fashion Do's and Don'ts." Five new members were admitted.

**Rockland.** The British War Relief Society, has named Mrs. Trevalyn Omstead, of Pearl River, auxiliary president, as chairman of a committee to collect vitamin pills, medical supplies, and instruments. Mr. K. R. MacCalman, Rockland County representative of the society, gave pertinent facts on the need of all available materials. At the business session the reports of committee chairman showed continued progress in Rockland County.

**Schenectady.** At the March meeting Mrs. C. W. Woodall, public relations chairman, presented Mrs. T. Y. Chien who spoke on "The Conditions in China and the Needs of the Chinese People." The auxiliary will cosponsor with the Schenectady chapter of the American committee for medical aid to China a benefit concert.

to be held May 17 in the Union College Memorial Chapel. Dr Robert C Maxon is acting chairman for Schenectady County. A program of "Legislation on Parade" was given by the study group on medical legislation of which Mrs Alfred Grussner is chairman. A donation was made toward the Campership Fund of the Schenectady Girl Scout Council and another to the Girls' Club of Schenectady. The group will be in charge of the April birthdays at the Eastern New York Orthopedic Hospital under the direction of Mrs H W Galster. Mrs A W Greene,

president, announced that during the past year the names of twenty doctors' wives were added to the membership list.

#### National Convention to A.M.A.

The annual meeting of Women's Auxiliary to A.M.A. will be held June 2 to 6, 1941, in Cleveland, Ohio. The headquarters are at Hotel Carter. Reservation requests should be sent immediately to Dr Edward F Kieger, chairman of Committee on Hotels and Housing, 1640 Terminal Tower Building, Cleveland, Ohio.

### IMPORTANT CONFERENCE ON INDUSTRIAL MEDICINE

A "postgraduate" Institute of Industrial Medicine and Industrial Hygiene, attracting industrial health specialists from all parts of North and South America, will be held in Pittsburgh, May 5 to 9. Scores of pertinent papers are scheduled on the medical and engineering phases of employee health protection.

The Institute marks the twenty-sixth annual meeting of the American Association of Industrial Physicians and Surgeons and the second annual meeting of the American Industrial Hygiene Association. Majority of the sessions will be held at Pittsburgh's William Penn Hotel.

A series of important dry clinics in Industrial Medicine and Surgery will be held at Mercy Hospital on the first day, Monday, May 5. John P Griffith, M.D., chairman of the hospital clinic committee and professor of surgery, School of Medicine, University of Pittsburgh, will be in charge.

One of the highlights of the day will be a consideration of diagnosis and treatment of various "Industrial Backs", another will be a discussion of pneumonia and its treatment with special reference to the use of some of the newer drugs, such as sulfathiazole.

The Hon Cornelius D Scully, mayor of Pittsburgh, will welcome the delegates on Tuesday, May 6. Other addresses of welcome will be made by Frederick Jacobs, M.D., president, Allegheny County Medical Society, and J T Shaw, secretary of health, Commonwealth of Pennsylvania. Response will be made by Daniel L Lynch, M.D., president of the American Association of Industrial Physicians and Surgeons, and Mr Warren Cook, president, Industrial Hygiene Association. Dr Lynch will make the president's address, after which the following subjects will be presented and discussed: (1) "Practical Results of Periodic Physical Examinations," by A J Kammer, M.D., medical director, Inland Steel Company, Indiana Harbor, Indiana, (2) "Relation of Trauma to Disease," by A H Colwell, M.D., associate professor of medicine, School of Medicine, University of Pittsburgh, (3) "Contact Dermatoses," by W H Guy, M.D., professor of dermatology, School of Medicine, University of Pittsburgh.

Tuesday afternoon will be devoted to presentations and discussions of the following subjects: "Sequelae of Head Injuries", "Trauma Other Than Fractures", "Mental Hygiene in Industry", and "Evaluation of Circulatory Function in Extremities". Individual group conferences will be held on Tuesday evening.

Wednesday morning will be devoted to recent

research on such subjects as carbon monoxide poisoning, effects of radiation from an ophthalmologic point of view, and various aspects of industrial lead exposures and lead poisoning.

Tuberculosis problems will be the main topic of discussion on Wednesday afternoon, including engineering preventive methods in the control of tuberculosis, other methods of prevention and control, and also discussions of bacteria in the air and problems of disinfection and ventilation.

A banquet will be held Wednesday evening at which principal speakers will be Dr Irvin Abell, chairman of Health and Medical Committee, Federal Security Agency, discussing the role of industrial medicine and hygiene in national defense, and V O Knudsen, dean of the Graduate School, University of California, Berkeley, speaking on "Noise and Hearing."

Industrial ventilation problems will be considered on Thursday morning. Subjects to be discussed are control of gases, vapors, and fumes, electroplating operations, air-borne infections, radiant cooling, and also studies of recent dust-determination methods including concentration and free silica content.

Industrial hygiene dust studies are scheduled for Thursday afternoon. This will include investigations in the chrome brick industry, lead and zinc mining, copper refining, and Fuller's earth as a cause of pneumoconiosis. Papers will also be read on particle sizes of dusts as found in various industries, animal and petrographic studies on talc dusts, and silicosis among naval foundry men.

Thursday evening's session includes miscellaneous subjects: a review of industrial hygiene progress during 1940, claims of industrial poisoning, medicine and engineering evaluation of exposures in the synthetic sausage and casing industry, sampling and determination of aldehydes, and the absorption and elimination of noxious vapors.

Friday morning's session includes a report on dermatitis control in a mass production industry, sporotrichosis as an occupation disease among florists, common solvent exposures, electric arc welding, gases, fumes, and vapors from coated welding rods, trends in occupational disease, and eye protection in industry.

The Institute concludes its symposiums on Friday afternoon with discussions of the following subjects: controlled radium hazards, phosphorus toxicology, biochemistry of carbon bisulfide, new synthetic chemical, toxicity of 1-1-dichloro-1-nitro-ethane, toxicity of methyl silicate, and toxic effects on animals of methyl, ethyl, and butyl methacrylates.

## Attention—All Members

*From the Winthrop Chemical Company, Inc, of 170 Varick Street, New York City, there came on April 3, 1941, the following statement together with information that it is being sent to all hospitals, wholesale druggists, and retail pharmacists*

PETER IRVING, M D , Secretary

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### SULFATHIAZOLE-WINTHROP

#### *Important Notice*

In the manufacture of tablets of Sulfathiazole-Winthrop, "M.P" control series (December, 1940), some of the tablets were accidentally contaminated with phenobarbital. Immediately upon discovery of this, active steps were taken by us to recover this entire series.

Our attempt to assure the return of all tablets of the "M P" control series is being continued, in conjunction with the nationwide effort of the U S Food & Drug Administration and other public agencies. In the interest of public safety, your prompt cooperation with us and with these public agencies in this search will be greatly appreciated, as these contaminated tablets may be dangerous.

Please examine the mark on every package of our Sulfathiazole tablets, and return to us immediately for exchange any package marked with the letters "M P". If you have dispensed tablets from bottles bearing these control letters, will you kindly endeavor to recover all such tablets which have not been consumed.

Needless to say, this occurrence is a matter of profound regret to us. Nothing of this nature has ever happened before in our history, and we are taking extraordinary precautions to prevent a recurrence. For more than two decades we have served the medical and pharmaceutical professions. During that period we have earned a reputation for high standards and outstanding products which we shall strive faithfully to maintain.

WINTHROP CHEMICAL COMPANY, INC

April 3, 1941

# Books

Books for review should be sent to the Book Review Department at 1313 Bedford Avenue, Brooklyn, N. Y. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and interest to our readers.

## RECEIVED

**Macleod's Physiology in Modern Medicine** Edited by Philip Bard. Ninth edition. Octavo of 1,256 pages, illustrated. St. Louis, C. V. Mosby Co., 1941. Cloth, \$10.

**An Introduction to Dermatology** By Richard L. Sutton, M.D., and Richard L. Sutton, Jr., M.D. Fourth edition. Octavo of 904 pages, illustrated. St. Louis, C. V. Mosby Co., 1941. Cloth, \$9.00.

**Bone Graft Surgery in Disease, Injury and Deformity** By Fred H. Albee, M.D. Octavo of 403 pages, illustrated. New York, D. Appleton-Century Company, 1940. Cloth, \$7.50.

**Williams Obstetrics. A Textbook for the Use of Students and Practitioners.** By Henricus J. Stander, M.D. Eighth edition. Octavo of 1,401 pages, illustrated. New York, D. Appleton-Century Company, 1941. Cloth, \$10.

**The Parasites of Man in Temperate Climates** By Thomas W. M. Cameron. Octavo of 182 pages, illustrated. Toronto, University of Toronto Press, 1940. Cloth, \$3.00.

**Biological Aspects of Infectious Disease** By F. M. Burnet, M.D. Octavo of 310 pages, illustrated. New York, The Macmillan Company, 1940. Cloth.

**Masochism in Modern Man** By Theodor Reik. Translated by Margaret H. Beigel and Gertrud M. Kurth. Octavo of 439 pages. New York, Farrar & Rinehart, Inc., 1941. Cloth, \$4.00.

**Emergency Surgery** By Hamilton Bailey, F.R.C.S. Fourth edition. Octavo of 944 pages, illustrated. Baltimore, William Wood & Company, 1940. Cloth, \$15.

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**A History of Medicine** By Arturo Castagnoli, M.D. Translated from the Italian and edited by E. B. Krumbhaar, M.D. Octavo of 1,013 pages, illustrated. New York, Alfred A. Knopf, 1941. Cloth, \$8.50.

**Spermatozoa and Sterility. A Clinical Manual** By Abner L. Weisman, M.D. Octavo of 314 pages, illustrated. New York, Paul B. Hoeber, Inc., 1941. Cloth, \$5.50.

**The Malarial Therapy of General Paralysis and Other Conditions.** By William H. Kupper, M.D. Octavo of 155 pages, illustrated. Ann Arbor, Edwards Brothers, Inc., 1939. Cloth, \$2.25.

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**Pharmacology** By J. H. Gaddum, Sc.D. Octavo of 407 pages, illustrated. New York, Oxford University Press, 1940. Cloth, \$6.00.

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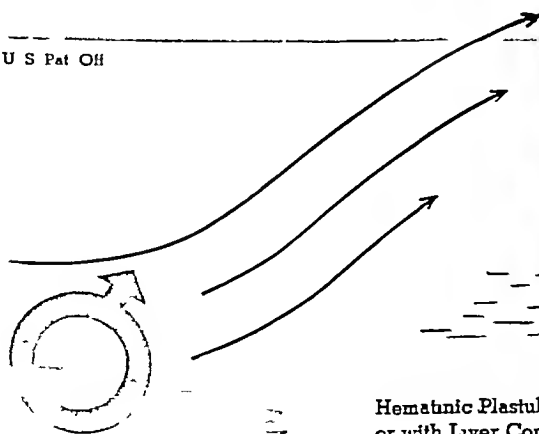
**Applied Neuroanatomy. Part I—The Spinal Cord.** By Rafael Hernandez, M.D. Quarto of 123 pages, illustrated. Nashville, Tennessee, Elm Hill Road and Arlington Avenue, The Author, 1941. Paper, \$3.50.

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**Applied Physiology** By Samson Wright, M D Seventh edition Octavo of 787 pages, illustrated New York, Oxford University Press, 1940 Cloth, \$7 00

**Techniques of Conception Control** By Robert L Dickinson, M D, and Woodbridge E Morris, M D Quarto of 56 pages, illustrated Baltimore, Williams & Wilkins Company, 1941 Cloth, \$5 50

**Applied Neuroanatomy Part I—The Spinal Cord.** By Rafael Hernandez, M D Quarto of 123 pages, illustrated Nashville, Tennessee, Elm Hill Road and Arlington Avenue, The Author, 1941 Paper, \$3 50

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## REVIEWED

**Operative Surgery** By J Shelton Horsley, M D, and Isaac A Bigger, M D Volumes I & II, Fifth edition Quarto of 1,567 pages, illustrated St. Louis, C V Mosby Co, 1940 Cloth, \$18 per set

The first edition of this work was printed in 1921. In it the author stressed the importance of preserving physiologic functions and the importance of proper interpretation of biologic processes, both of which are so essential to successful surgery but both of which are so often neglected by the surgeon. These same important underlying principles are found in the subsequent editions of 1924, 1928, 1937, and in the latest edition of 1940.

Before the fourth edition was printed, Dr. Horsley invited Dr. T. A. Bigger, professor of surgery at the Medical College of Virginia, to act as co-author. Dr. Bigger is well known for his work in thoracic surgery in addition to his work in general surgery. His contributions, which are numerous, to this book are presented in a scholarly but practical manner.

It is noteworthy that many of the newer surgical procedures, such as the operation for patent ductus arteriosus, segmental pneumonectomy, a new tube gastrostomy, excision of the duodenum and head of the pancreas, and Warthen's operation for benign rectal stricture, are described in detail. The chapters on the surgery of the vascular system have all been rewritten. The section on neurologic surgery has been completely revised and brought up to date. The chapters dealing with the various plastic operations have been deleted of some of the older procedures and in their place appear descriptions of the most recently devised operations for these congenital and acquired deformities.

Mention should be made of the 13,091 excellent illustrations that appear throughout both volumes. It is felt that illustrations such as these are an essential contribution to any book on operative surgery.

Drs. Horsley and Bigger have brought the subject of operative surgery up to the minute in a most satisfying manner. They have properly omitted procedures that have not stood the test of time. They have wisely chosen the most universally accepted procedures and have plainly and simply presented them, so that the student, as well as the finished surgeon who is still a student, will find these volumes of real help.

MERRILL N. FOOTE

**Foundations of Short Wave Therapy** Physics, Technics, Indications. By Wolfgang Holzer and Eugen Weissenberg. Translated by Justina Wilson and Charles M. Dowse. Octavo of 228 pages, illustrated. New York, Chemical Publishing Company, 1940. Cloth, \$5.00.

*Foundations of Short Wave Therapy* originally published in German in 1935 and translated into English in 1935 as above. A small volume of 224 pages, 155 pages are devoted to physics and technic and about 52 pages to medical application. The physics and technic should be of value to the physicist or physiologist but, it is too much for the ordinary physician who uses physical therapy to attempt to master. The medical applications cover an insufficient amount

of cases and would not be acceptable to the American physician who needs more clinical data.

The bibliography, both for the physics and medical section, only covers up to the year 1935. Considerable water has passed over the dam in the past five years, particularly in American physical therapy.

JOHN J. HAUFF

**Synopsis of Materia Medica, Toxicology, and Pharmacology** For Students and Practitioners of Medicine. By Forrest R. Davison, B A. Duodecimo of 633 pages, illustrated. St. Louis, C V Mosby Co, 1940. Cloth, \$5.00.

Although small in size, this book furnishes a modern account of the useful older drugs and a satisfactory account of the newer ones. The basic principles of pharmacology, materia medica, prescription writing, and toxicology are presented. The drugs are classified, according to the parts of the body they act upon, in a way the author has found useful in teaching. Vitamins, serum and vaccines, and hormones are all discussed. Much information is furnished in a concise and attractive manner.

W. E. McCOLLUM

**Organization, Strategy and Tactics of the Army Medical Services in War** By Lieut. Colonel T. B. Nicholls, M B. Second edition. Octavo of 488 pages. Baltimore, Williams & Wilkins Co, 1940. Cloth, \$5.00.

This second edition, appearing but four years after the first, has been printed because of the demand for the first edition and because present mechanized and aerial warfare required important additions.

Sections on transport of casualties by air, on the medical services of an antiaircraft division, and on emergency medical services of the Ministry of Health have been added to this edition. The volume is complete, concise, and accurate. It presents in brief the entire medical service of the army with the different necessary organizations to care for casualties, medical or surgical.

It is a volume that should be studied by every medical man who in any way will have the care of our people in case of war.

HENRY M. MOSES

**Your Mental Health or Between Mental Health and Mental Diseases** For Intelligent Laymen and Physicians. By B. Liber, M D. Octavo of 408 pages. New York, Melior Books, 1940. Cloth, \$3.00.

This book is another on mental hygiene intended to help the lay person cure himself. However, contrary to so many similar books which have appeared in the past few years, it contains a great deal of good common sense.

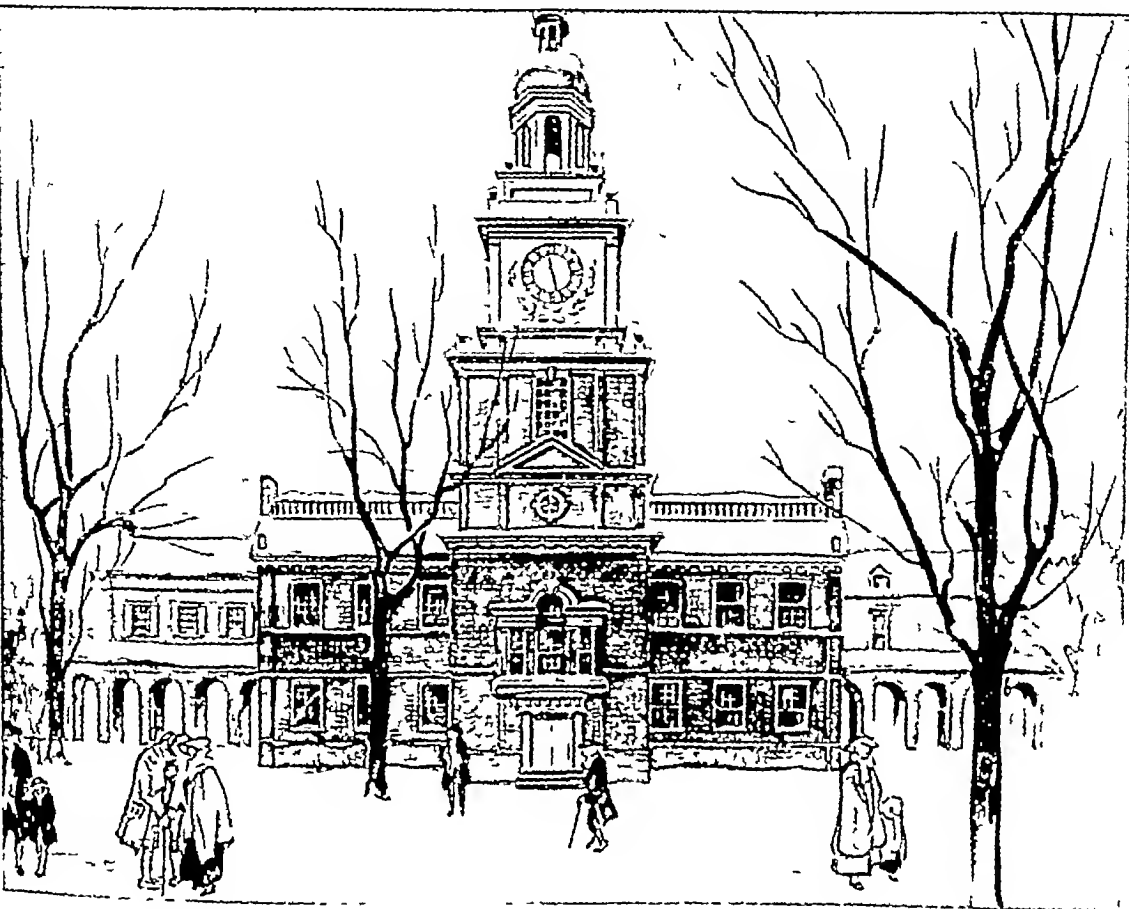
The author has made a serious attempt to enlighten individuals who suffer from conditions bordering on the psychoneuroses. To this end he presents numerous brief case histories to illustrate the problem under discussion. Similar reports by the author have appeared frequently in medical journals, and he has now made them a part of his book.

For those who have a great deal of misin-

[Continued on page 903]

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formation concerning sexual conflicts, masturbation, etc., the book will undoubtedly clear up many problems. However, it is doubtful whether it will really help persons suffering from a psychoneurosis and, in fact, may even make them more apprehensive and introspective.

Some psychiatrists will undoubtedly find fault with many statements made by the author, and he is probably correct when he states that they will be skeptical about the conversations and "cures" the author reports.

JOSEPH L. ABRAMSON

**The 1940 Year Book of Public Health.** Edited by J C Geiger, M D. Duodecimo of 560 pages, illustrated. Chicago, The Year Book Publishers, 1940. Cloth, \$3.00.

For the first time a volume on public health is added to the *Practical Medicine Series of Year Books*. The editor has selected articles pertaining to practically all activities usually included in a modern public health program.

In some respects, improvement might be made in the arrangement of material. A chapter is devoted to communicable diseases, but poliomyelitis and malaria are discussed under separate headings. Most of the articles on food and milk might be included in the chapter on communicable diseases. The amount of space given to the subject of housing seems to be inadequate. The 296 editorial comments are much to the point.

This is a book of value to the busy worker in the public health field. He will find many articles of interest not covered by his usual reading activities during the year.

F L. MOORE

**Synopsis of the Principles of Surgery.** By Jacob K. Berman, M D. Duodecimo of 615 pages, illustrated. St Louis, C V Mosby Co., 1940. Cloth, \$5.00.

This is a compact volume which, for one of its size, covers in a clear and concise manner the principles of surgery.

In glancing through the index, one finds the number of subjects listed equal to those found in larger volumes. A clear synopsis with excellent illustrations add greatly to the value of the publication.

It should prove an invaluable reference book to medical students and should occupy with grace a prominent place as a handbook on the desk of every physician and surgeon.

One might liken the book to a compend for quick reference with the additional advantage of descriptive diagrams and exceptionally clear photographs.

RALPH F HARLOWE

**Fractures and Dislocations for Practitioners.** By Edwin O Geckeler, M D. Second edition. Octavo of 314 pages, illustrated. Baltimore, Williams & Wilkins Company, 1940. Cloth, \$4.00.

This excellent work has been brought completely up to date in the present edition. Written for the general practitioner, the author has attempted to consider all valuable procedures in detail. However, a reliable method of treatment is presented for the particular fracture described. Of especial value is the excellent discussion of

skeletal traction which is so essential in the treatment of many fractures of the lower extremities. The treatment of ankle fractures is ably presented. It is of interest to note that Pott's fracture, of rare occurrence, is accurately described. This is not the case in many fracture texts. There are some cases to which exception might be taken. For example it is stated that "displaced fractures of the capitellum cannot be reduced by manipulation and must be replaced by operation."

Many new photographs and x-ray reproductions have been added to this edition. There is a bibliography at the end of each chapter. The paper is of excellent quality and the type of good size. This book is strongly recommended.

MAYER E ROSS

**The New International Clinics. Original Contributions, Clinics, and Evaluated Reviews of Current Advances in the Medical Arts.** Edited by George M Piersol, M D. Volume IV, New Series Three. Octavo of 326 pages, illustrated. Philadelphia, J B Lippincott Co., 1940. Cloth, \$3.00.

This issue of the *International Clinics* contains a symposium of twenty-three clinics contributed by the faculty of the University of Louisville, School of Medicine. There are, in addition, eleven original contributions of practical importance and a review of the present status of the management of spreading peritonitis of appendiceal origin.

MILTON PLOTZ

**Methods for Diagnostic Bacteriology.** A Complete Guide for the Isolation and Identification of Pathogenic Bacteria for Medical Bacteriology Laboratories. By Isabelle G Schaub, A B, and M Kathleen Foley, A B. Octavo of 313 pages. St Louis, C V Mosby Co., 1940. Cloth, \$3.00.

This book contains a clear and precise description of the bacteriologic and serologic methods used in clinical bacteriology. In addition to the usual routine procedures it deals also with more complicated problems of diagnostic bacteriology. It is actually a good manual of bacteriologic and serologic technics. Throughout the book the presentation of the subject is based on the personal experience of the authors in the department of pathology and the laboratory of the medical clinic of Johns Hopkins University.

U FRIEDEMANN

**The Histamine and Insulin Treatment of Schizophrenia and Other Mental Diseases.** By Horace Hill, M R C P. Duodecimo of 133 pages. Baltimore, Williams & Wilkins Co., 1940. Cloth, \$1.75.

The author, a medical superintendent of a mental hospital in England, has written this book in response to many requests for details of his method of treating mental diseases with histamine and insulin.

He has had many years of experience with this treatment. It has been his opinion that shock encountered in insulin therapy was due to the liberation of histamine in the tissues. He therefore used small doses of insulin, 5 to 10 units, combined with 0.5 to 1.5 mg of histamine injected hypodermically daily for several months.

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Some years ago a group of midwest hospitals promoted a campaign to wipe out the stigma persisting in connection with mental disease. In their opinion neither the laity nor the profession in general had been convinced up to that time that there should be no stigma attached to the fact that a patient had been in an "asylum" for treatment.

The first object of these hospitals was to re-educate the public in the use of the term "insanity." They emphasized that definitely it was not a medical term, but rather a social and legal word. As such its usage implied cases with mental disturbances of so marked a degree that legal measures were necessary for the protection of the patient and society.

This required protection brought about the establishment of the so-called asylum for protective measures rather than for the treatment of the unfortunate patients. Modern times have brought many changes, however, in

such an attitude. The care and treatment of mental cases is now essentially a medical problem with well trained medical and nursing staffs an absolute necessity for successful and proper handling of the problem.

Whether the laity and the medical profession entirely are taking a more reasonable attitude toward mental illness, it is difficult to judge. The medical profession is using the term "insanity" less and less and this is helping considerably to overcome the mark of disgrace in the public's feeling concerning the mentally ill. In neuro-psychiatric nomenclature, it is certain that the term has no place except perhaps when it is necessary to use it as a legal definition.

It is indeed unfortunate that the laity persists in regarding insanity as a weakness that the victim is personally responsible for, and an incident that even

(Continued on page 911)

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[Continued from page 904]

He noted a marked improvement in the mental reactions of many of his patients. He cites case histories to illustrate the results obtained by his method.

Insulin and other shock therapies have become accepted methods of treatment in the psychoses, particularly in schizophrenia. The precise mechanism by which the improvement is induced is not yet quite clear. The author offers some plausible leads that may help to arrive at a reasonably convincing explanation of the manner by which insulin and the other forms of shock therapy act.

It is a practical and valuable small book that will prove useful to everyone interested in this particular phase of medicine.

IRVING J SANDS

**Bacteriology in Neuropsychiatry** A Survey of Investigations Concerned with the Specific Role of Infectious and Immune Processes. By Nicholas Kopeloff, Ph.D. Octavo of 316 pages. Springfield, Charles C Thomas, 1941. Cloth, \$4.50.

The author, who is research bacteriologist, New York State Psychiatric Institute and Hospital, presents in this volume the contributions that bacteriology and immunology have made to the study of nervous and mental disorders. He has made available in one book a widely scattered literature, and, because of his intimate knowledge of bacteriology, he is able to evaluate this information for us.

The contents of the book are divided into four sections: (1) the diseases of known etiology with primary involvement of the nervous system, (2) diseases of known etiology with secondary involvement of the nervous system, (3) diseases of unknown etiology involving the central nervous system, and (4) immunology of the central nervous system.

The short paragraphs devoted to symptomatology and pathology of each disease are entirely too brief to be of value. However, the value of the book lies in the author's discussion of etiology, epidemiology, and immunization of the various diseases which affect the nervous system.

JOSEPH L ABRAMSON

**Diagnosis and Treatment of Arthritis and Allied Disorders** By H. M. Margolis, M.D. Octavo of 551 pages, illustrated. New York, Paul B Hoeber, Inc., 1941. Cloth, \$7.50.

This volume presents a clear, concise, and beautifully illustrated study of the various forms of arthritis. No type of the disease has been omitted nor any phase neglected. The chapters dealing with atrophic arthritis are, however, particularly important. Dr. Margolis has carefully outlined the various forms of treatment and has thoroughly evaluated them. An especially complete study has been made of gold salt therapy. The illustrations accompanying the discussion of corrective and preventive measures in atrophic arthritis are clear and enlightening.

This book should be helpful to the general practitioner who so often is confronted by the difficult case of arthritis. The specialist may be well repaid by reviewing it, and the medical student should find the volume of value.

A SIDNEY BARRITT, JR.

**A Textbook of Clinical Pathology** Edited by Roy R. Kracke and Francis P. Parker. Second edition. Octavo of 780 pages, illustrated. Baltimore, Williams & Wilkins Company, 1940. Cloth, \$6.00.

In the second edition of this book the authors present up-to-date methods used in the clinical laboratory and their interpretations. The means of obtaining specimens and various tests are clearly described and profusely illustrated. Among newer tests are the estimation of various hormones and vitamins in the blood and urine, sulfanilamide, sulfapyridine, and sulfathiazole, new procedures for the cultivation of bacteria, and many others. Each chapter is written by an expert and is extremely informative.

E. H. NIDISH

**A Treatise on Medicolegal Ophthalmology** By Albert C. Snell, M.D. Quarto of 312 pages, illustrated. St. Louis, C. V. Mosby Co., 1940. Cloth, \$6.00.

For many years the author has interested himself in medicolegal ophthalmology and especially in that phase relating to administration of the workmen's compensation laws with respect to visual defects resulting from eye injuries. He has made a number of contributions to the literature of these subjects and now brings together in this book the results of his study, research, and experience—the first complete treatise of its kind in many years. It contains a great deal of information and many suggestions for the improvement of existing laws in evaluating visual losses, stressing particularly the importance of functional loss—loss of use—rather than visual acuity loss as the basis for compensation.

The book is divided into three parts. Part I is titled "Some Essential Principles of Medical Jurisprudence and an Analysis of Compensation Laws as These Relate to Visual Disabilities." In this the author discusses the elements of expert testimony, malpractice, and certain phases of compensation laws. Part II is "Evaluation of Visual Disabilities—The Determination of Fractional Parts of Vision." In this he introduces chapters on the physiology of vision and the percentage evaluation of visual perception, both central and peripheral, and of the muscle function.

Part III is concerned with "Practical Application of the Visual Efficiency Computation to Medicolegal Practice," in which he enlarges upon his thesis that indemnification should be based upon functional efficiency values rather than merely upon visual acuity. This book is a valuable aid to all ophthalmologists who are interested in court work and especially to those who do compensation work. It is also to be hoped that it may come to the attention of legislators throughout the country in the interest of more uniform compensation laws in the various states.

E. CLIFFORD PLACE

**Diseases of the Gallbladder and Bile Ducts.** By Waltman Walters, M.D., and Albert M. Snell, M.D. Octavo of 645 pages, illustrated. Philadelphia, W. B. Saunders Co., 1940. Cloth, \$10.

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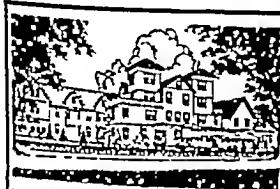
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## PIONEERING AGAINST "INSANITY"

(Continued from page 909)

makes the entire family suspiciously sub-normal. They fail or refuse to recognize that it is a disease just as likely to strike anywhere as cases of pneumonia, tuberculosis or similar illness, that the causes are often everyday affairs to which they themselves are not absolutely immune.

It is unfortunate that a victim's family must feel that it is something to be hidden from friends and associates if possible, that they must try to cover up the misfortune and try to soften the unwarranted stigma by referring to the matter as a "nervous breakdown."

Probably nothing but time and a more enlightened people will become accustomed to the true light of mental conditions as being purely a disease and not some freakish prank of nature.

Certainly nothing short of sincere efforts on the part of the medical profession in helping to educate the public in overcoming superstitions and prejudices relative to nervous and mental diseases, can bring about a reform in ideas about the mentally ill. But while others who have not experienced the troubles and anguish of having had someone close to them fall a victim of mental collapse, still look upon such cases as something to be ashamed of, the family and the patient should be spared as much publicity as possible.

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[Continued from page 908]

This monograph of Walters and Snell is a presentation of the experience and practice of the Mayo Clinic in the surgical treatment of diseases of the gallbladder and bile ducts. This experience, which covers nearly 40,000 cholecystectomies, is truly overwhelming. Because it is written from the point of view of the surgeon, the preoperative medical preparation of these cases is stressed, but little is said of the management of the nonsurgical patient. The general practitioner would welcome additional chapters by Alvarez dealing with functional disturbances of the gallbladder and with functional disturbances simulating gallbladder disease. The volume is beautifully illustrated and well indexed and should be a standard reference book for all interested in gastroenterology.

CARL H GREENE

**Pharmacology and Therapeutics** By Arthur R. Cushny, M.D. Twelfth edition by C. W. Edmunds, M.D., and J. A. Gunn, M.D. Octavo of 852 pages, illustrated. Philadelphia, Lea & Febiger, 1940. Cloth, \$6.50.

This classic, now in its twelfth edition, has been thoroughly revised and brought up to date. The present authors, who have kept this book alive since Cushny himself "ceased to write," have successfully carried it through the last four editions. In these days of hectic pharmacologic research and the intense interest manifested in therapeutics, it is an arduous task to maintain the scientific excellence of a work of this kind. Frequent revisions are necessary to eliminate those agents that are no longer useful to make room for the newer drugs of our modern armamentarium. Among the newer drugs included in the present volume, conservatively evaluated in the light of our present knowledge regarding them, are the "wonder drugs," sulfanilamide, sulfapyridine, sulfathiazole, and allied compounds. This book is highly recommended for students and practitioners.

FREDERICK SCHROEDER

**Psychotherapy** Treatment that attempts to improve the condition of a human being by means of influences that are brought to bear upon his mind. By Lewellys F. Barker, M.D. Duodecimo of 218 pages. New York, D Appleton-Century Company, 1940. Cloth, \$2.00.

Dr Barker's modestly priced little volume will probably find a wide audience. Dr Barker restricts the use of the term "psychotherapy" to "treatment that attempts to improve the condition of a human being by means of influences that are brought to bear upon the mind," a definition that will satisfy his most critical readers. The book is readable, fair to most schools of psychotherapy, and a reliable guide to conservative methods of therapy. The advice given is usually helpful and sometimes remarkable, such as the advice that the married patient "should refrain from anything like philandering or spending too much of his time with, or money on, other women!" We wonder how much Dr Barker would consider "too much."

MILTON PLOTZ

**The Diagnosis and Treatment of Diseases of the Heart.** By Henry A. Christian, M.D.

(Reprinted from Oxford Monographs on Diagnosis and Treatment.) Octavo of 599 pages. New York, Oxford University Press, 1940. Cloth, \$7.00.

This excellent book treats of all the common and many uncommon affections of the heart. It stresses the bedside observation of the patient and assigns to their proper perspective laboratory procedures, recognizing their value but showing that they do not give the final answer, as they supply only part of the whole picture. Before adequate therapy can be instituted a proper diagnosis is essential, and the book adopts this premise throughout. It represents the results of the author's experience in his many years of hospital practice, and all views put forth are founded on critical analysis. On disputed points a common-sense attitude is adopted, and conclusions are based on sound reasoning. Although no effort has been made to review the whole literature on various disorders, the references are pertinent and up to date. The practicing physician will find this a valuable book, as it represents a splendid clinical review of diseases of the heart.

J HAMILTON CRAWFORD

**Bacillary and Rickettsial Infections. Acute and Chronic. A Textbook. Black Death to White Plague.** By William H. Holmes. Octavo of 676 pages. New York, Macmillan Company, 1940. Cloth, \$6.00.

This book on bacillary and rickettsial infections does not follow the conventional form of presentation. The author describes not only the clinical manifestations of the diseases but also their historical relationship to contemporary civilization. The advantages of such a treatise from the cultural standpoint are definite. Moreover, the treatise leads to a more true understanding and appreciation of the problems that have been solved, as well as those for which a solution is sought.

The volume is divided into eight sections and comprises thirty-four chapters. In the first section the author describes the Pasteurella infections of plague and tularemia, in the second the rickettsial infections of man including the various forms of typhus fever. The third portion is devoted to Brucella infections and the fourth to the enteric group of diseases. In the fifth section the more important bacillary infections and intoxications are described, including diphtheria, botulism, tetanus, and gas gangrene. The last three sections of the book are devoted, respectively, to the hemophilus infections, the mycobacterial diseases, and miscellaneous bacillary diseases such as anthrax and glanders.

The references that the author gives are those that he has actually consulted himself, and they are sufficiently modern. In many places Dr Holmes discusses controversial points, and the position he takes appears, in general, to be a logical one based on careful scientific reasoning and on available information. This important book is modern in content and is rich in subject matter, with a unique and interesting form of presentation in which the classical and historical aspects of the subject receive suitable emphasis. It is a contribution of value.

JOSEPH C. REGAN

# NEW YORK STATE JOURNAL OF MEDICINE

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## *Editorial*

### Medical Student Training

The medical student training problem must be honestly faced—now. There is no possible excuse for intellectual unpreparedness. The health of the people is the strength of the Nation. And that health can be conserved, maintained, and bettered only by the medical profession and its work. Neither politicians, nor legislators, armies, demagogues, lawyers, bureaucrats, statisticians, accountants, labor unions, or machinists can do this—but only physicians. This is the fact, this is the truth, this is the inescapable reality from which there can be no flight.

You will never see a synthetic doctor, an "ersatz" physician, or a "blitz-educated" surgeon! You will never see doctors of public health, research physicians, or pathologists come rolling off an assembly line! For—mark this well—physicians, real physicians, the family doctor, the specialist, the doctor, the only doctor who is entitled to write M D after his name, is only a medical student, a medical student with more experience, an experienced medical student with a license to practice, a licensed, experienced medical student who practices his profession while he continues to study.

Time. Time "is of the essence of the contract." Time for study, time for experience, time for practice, time to train and discipline physicians, those who have the earned right to write M D after their names, so that they shall be competent by actual trial and proof to preserve,

maintain, and better the health of the people, that health which is the strength of the Nation; that health which only physicians can preserve.

War! War in Europe! Preparedness here!! Now, this minute. This year. For many years. Physicians. Physicians! Physicians!! Surgeons. Pathologists. Epidemiologists. Doctors of Public Health. Ophthalmologists. Neurologists. Psychiatrists. Radiologists. Bacteriologists. Army doctors. Navy doctors. U S Public Health doctors. Doctors for Defense! Doctors wanted for defense!!

Doctors are only medical students with experience. Medical students. Medical schools. Graduates in medicine. How many do we have? Here in the United States? Approved medical schools graduate yearly 5,000 medical students, students yet without experience, without hospital training, without experience in practice. Five thousand doctors of medicine, men and women, educated but not yet fully disciplined or experienced.

War! Death!! What is the death rate among United States physicians who are responsible for the lowest civilian death rate ever known in this Nation? Every year 3,800 to 4,000 physicians die and their skill and their experience die with them. In peace time they die at this rate. In war time, faster.

Faster. faster. hurry. more physicians! Physicians for defense. Physicians for Britain! April 20, 1941. "Roosevelt Asks 1,000 Doctors to Vol-

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See page 913

## What is the Physicians' Home?

The Physicians' Home is not an academic experiment. It is a reality. It concerns itself with the future and old age of human beings,—members of our profession. The Physicians' Home provides a home and maintains comfortable standards of living for its guests.

The validity of our worthy charity is not to be looked for in stone, but in the actual benefits now utilized by members of our own profession. It is a challenge to all of us to accept the responsibility for helping those less fortunate than ourselves. *Please cooperate*

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Because a healthy population is the indispensable foundation of national and social security

Such a program demands the truth, there is no time to spare for quibbling and indirection, verbal fencing, now is the time for plain, unvarnished truth

In his message to Congress on the state of the Union, January 6, 1941, the President said that this was "no time to stop thinking about the social and economic problems" of the nation. We agree with him in principle. This Society is even now sponsoring a radio program every week on station WMCA in which, relative to those social and economic problems we show how the doctor is involved in every step of the present training program in housing, in feeding, in physical hardening, in adaptation to climatic changes, in relaxation, in recreation, in mental and physical hygiene. We show the current arrangements for treating illnesses and disabilities. We show the preventive phases of the doctor's work in both civilian and military life.

The defense program demands the truth! It is the only acceptable and workable foundation for mutual understanding and unimpaired efficiency. "There is a place for government in medicine. It is the place of government to govern, to decide the rules under which the game shall be played. *It is not the place of government to make the rules, play the game, and to umpire all at the same time, and besides to make the people pay—and most often pay excessively—for participating in the spectacle*"<sup>1</sup>. Think about that. Now is the time. Time for what? To keep thinking about the social and economic problems of the nation.

About the economic problems especially. About taxes, for instance. Hidden taxes translated into terms of average families in the various income groups.

A recent survey<sup>2</sup> shows that "the lowest income group (\$1,250-\$1,500, average \$1,364) spends \$3.00 a year in direct taxes, but pays an additional \$204 in *hidden levies*. This brings about the following *reductions in standard of living*: Food, from \$487 to \$449. Clothing, from \$123 to \$111. Shelter, from \$427 to \$320. Automobile, from \$93 to \$73. Welfare, from \$142 to \$128. Comforts, from \$89 to \$80.

"In the middle groups (between \$3,000-\$4,000, average \$3,394) direct taxes take only \$13, but an additional \$447 comes out painlessly. Hidden taxes bring about the following *reductions in purchasing power*: Food, from \$770 to \$680. Automobile, from \$289 to \$228. Welfare, from \$824 to \$742. Comforts, from \$276 to \$247. The tax collector, it appears, is quicker than the eye."

So much for hidden taxes. The welfare item includes savings, commuting, medical and educational costs and represents about 10 per cent in *hidden taxes*. Medical costs—hidden taxes—who pays them in lowered standards of living? Now is the time to tell the people the truth, all of the truth, about doctors in medicine, about government's place in medicine, about hidden taxes and standards of living, about medical education and the preparedness program, about the cost of "free," tax-paid, or "state" medicine for which both sick and well people in the end will have to pay either in direct or hidden taxes. The care and feeding of government is the direct concern of the tax collector.

<sup>1</sup> The Doctor and the State, Lanning E. Like, M.D. F.A.C.S., Medical Times (Feb.) 1941

<sup>2</sup> Reported in the *New York Sun*, March 20, 1941, p. 11 (Italics ours—Ed.)

unteer to Go to Britain." Headlines Headlines Editorials "Already there is heard from public hospitals and other charitable institutions the cry of alarm that there is a growing shortage of nurses and interns Only recently was that declaration made public \*\* The British Red Cross has appealed, through the American Red Cross, for as many as 1,000 young American doctors to help meet "an acute shortage" of physicians in British hospitals "As President of the American Red Cross," Mr Roosevelt said, "I heartily approve this request "

Doctors for defense Doctors for the military services Doctors for Britain Doctors, more doctors How many are there? In the United States and its possessions, how many are there? 180,075 licensed to practice, 27,000 of them 65 years old or older, 153,075 under 65 years to care for a population of 130,000,000, to service an army under present plans for training of 1,400,000 men

Reserves The Medical Reserve Corps How many? 13,500 of whom about 75 per cent are fit for active duty, active military service Young men How many new graduates (women and men) are fit for active military service? About 60 per cent of the 5,000 annual graduates, or 3,000 young men not yet thoroughly disciplined or trained, lacking experience

Requirements The military services

require about five times as many physicians per 1,000 men as are needed in civilian practice Industry needs physicians Communities must not be deprived of proper medical supervision and service The Gallup poll\*\* answered the question "Should students studying to be doctors and engineers be permitted to finish their present training course before being drafted into the Army?" Yes 87 per cent, No 13 per cent

Facts Local draft boards have the power to decide the question of deferments of individual cases on their specific merits Local draft boards are composed of the people who answered the Gallup poll There should be little fear of interference with medical student training under these circumstances The American Medical Association has wholeheartedly approved the President's call for 1,000 physicians to volunteer for aid to Great Britain There will be no shortage of physicians, men entitled to write M D after their names, either for the Nation's defense, or the training program, or for the maintenance of health in industry and in the communities of the United States, *if the medical student training program of American medical schools is uninterrupted*

\* *Citizen-Register* Ossining N Y April 15 1941 p 4  
 \*\* N Y Times April 17 1941

## Now Is the Time.

Time for what? Well, among other things, "for all good doctors to come to the aid of their nation They can aid their country and protect the interests of the people by once more occupying a prominent place in the civic and political life of the community"<sup>1</sup> The physician today is *professionally* "an integral, indispensable factor in the activities by which Americans keep alive, activities by which Americans learn, make a living, and amuse themselves, activities by which Americans are today preparing to defend their land and their way of life

"There is war in the world today  
 "We in this country, in this century, have learned and come to accept the proposition that no man is alone"<sup>2</sup> The nation needs its physicians in every aspect of national defense and in every aspect of civil life that supports and makes possible this defense program

Such a program needs billions of dollars, some for materials, *most for labor, wages*

<sup>1</sup> Doctors and Politics M F Cahal Bull of Intersociety Com for Radiology Radiology 36 No 3 370-372 (March) 1941

<sup>2</sup> Radio Bull No 38 Pub Rel Bur Med Soc of the State of N Y, April 2 1941, pp 2-3

## Dr Samuel Joseph Kopetzky

Samuel Joseph Kopetzky, M.D., was born in New York City, August 1, 1876. He was educated in the public schools and attended the College of the City of New York. He received his doctor's degree at the College of Physicians and Surgeons, Columbia University, New York, in 1898.

He became instructor, diseases of the ear, New York Post-Graduate Medical School and Hospital in 1905, was clinical assistant, then assistant surgeon, and finally junior surgeon at the Manhattan Eye, Ear, Nose and Throat Hospital in the division of otology where he remained until 1917. He has been professor of otology, New York Polyclinic Medical School and Hospital, and director, department of otolaryngology, at that institution from 1939 to the present time.

Dr Kopetzky is also director of otolaryngology, Israel-Zion Hospital, Brooklyn, consulting otolaryngologist, Beth Israel Hospital, New York City, Nyack Hospital, Nyack, New York, Newark Beth Israel Hospital, Newark, New Jersey, Vassar Brothers Hospital, Poughkeepsie, New York, and to Jamaica Hospital, Jamaica, Long Island.

He is a fellow of the American Medical Association, The New York Academy of Medicine, the American College of Surgeons, the American Academy of Ophthalmology and Otolaryngology, past-president, Medical Society, County of New York, 1925, past-president, American Laryngological, Rhinological and Otological Society, 1938, chairman, Committee on Scientific Work, Medical Society, State of New York, 1926-1927, chairman, Special Committee on Publicity, Medical Society, County of New York, 1931-1940, speaker, House of Delegates, Medical Society of the State of New York, 1933-1938, chairman, Section of Otolaryngology, The New York Academy of Medicine, 1933, editor, *New York Medical Week*, official organ of the Medical Society of the County of New York, 1923-1940, member, Editorial Staff (literary chairman), *NEW YORK STATE JOURNAL OF MEDICINE*, 1935-1940, chairman, Committee on Medical Preparedness, Medical Society, State of New York, 1940-1941.

Dr Kopetzky served in volunteer infantry, Spanish-American War, served in World War, entering the U S Army as a captain, Medical Corps, 1917, was successively promoted to ranks of major, lieutenant-colonel, and, finally, colonel. He served in France with the 81st Division, and was cited for gallantry after the Argonne-Meuse offensive. He was awarded the Conspicuous Service Cross for overseas service by the State of New York. At present he holds the rank of colonel in the Medical Corps. Dr Kopetzky was ordered to active duty last September as director, Medical Division, Selective Service Administration, New York City area.

Dr Kopetzky has served the Society as president-elect during the last year in a time of much difficulty and stress owing to the first peace-time training under the Selective Service Act.



SAMUEL J KOPETZKY, M D

# THE NEUROSURGICAL APPROACH TO EPILEPSY

JOHN E. SCARFF, M.D., New York City

FOR many years the patient who suffered with convulsions was branded as an "epileptic" and was abandoned to a life of ostracism and despair. Today, however, we have a different point of view. We regard convulsions not as a disease but merely as a symptom or sign which may be produced by any one of a number of different diseases. Today we look upon convulsions in much the same way as we look upon fever, pain, nausea, or failing vision—simply as a clinical symptom.

A convulsion indicates either a pathologically irritable brain, or else a pathologically irritated brain. The etiologic factors capable of contributing to either of these two states are numerous and diverse.

## Etiologic Factors

The pathologic factors producing convulsions may be (a) diffuse or (b) discrete.

(A) *Diffuse Pathologic Processes*—Those processes that tend to make the brain as a whole more irritable—or as we say "have a lower threshold of excitability"—are apt to be diffuse. If anatomic (structural), they are illusive and often cannot be demonstrated. In many instances they may be essentially physiologic (chemical). In either event it seems probable that the primary etiologic factor in the so-called epileptic brain is a congenital and constitutional defect.

Various secondary mechanisms, however, may operate in different individuals to "release" the convulsions. For instance, in the convulsions that frequently usher in acute infectious illnesses of childhood, "the release mechanism" might be simply the hyperpyrexia of the child's body, or it might be the toxins elaborated by the invading organisms. The convulsions accompanying uremic poisoning are apparently released as a result of the abnormally high concentration of nitrogenous waste products in the blood stream, which would normally have been eliminated by the kidneys. The convulsions of eclampsia are due to a still different release mechanism.

Various biochemical mechanisms may have an influence on the incidence and severity of

convulsions in a person who is already constitutionally inclined to have such attacks. It has been found with some patients that an unfavorable water balance or acid-base balance within the body will affect the incidence and severity of convulsions. We know, too, that hypoglycemia (hyperinsulinism) occasionally induces epileptiform seizures.

Other speculative causes of convulsions or their release mechanisms would include dietary and vitamin deficiencies and allergy. Since the Na-ion concentration of the body fluids has been shown to be a marked secondary factor in producing the violent paroxysmal irritation of the inner ear characteristic of Ménière's syndrome, it is altogether possible that abnormal concentrations or deficiencies of this or other ions in the body fluids might form a release mechanism for convulsive disorders. These are aspects of the questions which merit further study.

(B) *Localized Pathologic Processes*—Pathologic processes that cause irritation of a brain constitutionally normal are apt to be discrete, localizable lesions usually, though not invariably, grossly anatomic in nature. They may be (1) developmental anomalies, (2) vascular anomalies, (3) inflammatory and postinflammatory processes (these include cerebral abscess, postmeningitic adhesions, tuberculomas, and syphilomas), (4) traumatic sequelae, such as depressed fractures of the skull, cortical cicatrices, and hematomas, (5) neoplasms—probably the most common cause of convulsions arising in adults.

In addition to these strictly anatomic lesions, however, there would appear to be other focal lesions that are essentially or completely physiologic. Electroencephalographic studies made upon persons suffering from convulsive disorders frequently reveal sharply localized areas of the brain from which emanate electrical discharges. Similar observations have been made directly upon the exposed brain at the operating table. It is reasonable to believe that these areas represent points on the cortex of the epileptic brain from which convulsions are released.

Again, when the exposed human cortex is stimulated electrically at the operating table with a mild current, sharply focal responses are, as a rule, obtained, for instance, by stimulating an appropriate area, one finger may be made to flex or one side of the face to

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 7, 1940.

\* From the Department of Neurology, Columbia University College of Physicians and Surgeons and the Neurological Institute of New York.

## The Surgery of Deafness

There probably is no more spectacular branch of surgery for the restoration of sensory function than that which deals with the improvement of hearing acuity in the deafened. The so-called simple mastoidectomy, which Whiting alluded to as one of the prime life-saving measures, had its origin in the efforts of surgeons to discover a cure for hardness of hearing. This, failing in its original intent even though it succeeded in eliminating threats to intracranial invasion, stimulated many otologists to seek a remedy for certain forms of deafness by attacking surgically the impaired channels to the receptive mechanism in the cochlea. Many outstanding otologists have delved seriously into this problem—Passow, Bárány, Fremel, Alderton, Jenkins. In recent years, Holmgren, Sourdille, Lempert, Campbell, and Kopetzky have interested themselves in the possibilities of surgical therapy for the deafened.

The lay press has been so full of promising results that surgery, patterned after Holmgren and Sourdille, might bring in its train that the sober résumé of Kopetzky<sup>1</sup> at the annual meeting of the American College of Surgeons adds freshness and clarification to this issue. He states that "the greatest possible care

<sup>1</sup> Kopetzky, S. J. Surg., Gynec. and Obst. 72: 466 (Feb. 15) 1941.

must be exercised, in making promises of what will be accomplished by these operations." He ventures that there is promise in the evolution of surgical therapy for the deafened, but at the present time every possible safeguard and caution should be exercised. While good results are on record, the type of case which will react best to labyrinthine fenestration remains unclarified. At present it is impossible to make a definite estimate of its value to an individual patient as a means of restoring hearing. While new vistas of research have been opened, the paucity of knowledge concerning the physiology of hearing has also been brought to the fore.

Physicians who may be consulted by their deafened patients concerning this surgery should be aware of the limitations that now exist. Kopetzky states: "Many troublesome, annoying experiences will be avoided if not only the patient but his family are told exactly what this surgery holds out for him and that it is impossible truthfully to predict results on hearing acuity." The recorded data show to date that some patients in whom the surgery has been successful and in whom the audiogram indicates a sustained gain in hearing acuity are, nevertheless, dissatisfied because they *still are hard of hearing*.

## Hyperinsulinism

The clinical syndromes arising from over-activity of the thyroid, pituitary, and adrenal glands have been meticulously described and are readily recognizable upon examination. The physician, however, rarely considers that it is just as possible for the islands of Langerhans to secrete more insulin than the body normally requires. And thus may be produced the disease that Harris<sup>1</sup> alludes to as "hunger disease."

Over eight years ago, Harris called attention to the correlation of low blood sugar levels with vague spells of nervousness, weakness, and abdominal discomfort. These symptoms, sometimes accompanied by unconsciousness and convulsions, occur between meals or during a meal before the food has been sufficiently absorbed to raise the level of the blood sugar. The patient will state that several pieces of candy, orange juice, or some other sweet gives him relief, and that he can diminish the severity of the attacks in this manner. This history, because of its close

similarity to the complaints of many hysterics, may erroneously lead to a diagnosis of psychoneurosis.

An eight-hour sugar-tolerance test, during which time the patient should engage in his usual activities, assures an accurate diagnosis. Blood collected when the symptoms are most acute will reveal a low sugar content. The therapeutic test, wherein rest, coupled with a low carbohydrate diet and hourly drinks of fruit juices, alleviates the symptoms, is almost diagnostic of hyperinsulinism.

In the mild and moderately severe cases, Harris has obtained relief of symptoms by dietary measures. Restriction of activity, dividing the daily requirement of food into five to seven feedings, with fruit juice between meals, is the regimen he advocates. Severe cases require the administration of glucose intravenously or, where a new growth of the pancreas is suspected, exploratory surgery and partial resection when necessary. Of prime interest, however, is the clinical recognition of the syndrome of hyperinsulinism.

<sup>1</sup> Harris, S. South Med & Surg 102: 687 (1940).

duced by a localized lesion that could be removed surgically

All the available sources of focal data should be painstakingly examined in every case of epilepsy. Focalizing features of great importance but not at first apparent may many times be brought to light by various diagnostic studies. These may, for convenience, be divided into (a) minor diagnostic studies and procedures and (b) major diagnostic procedures

(A) *Minor Diagnostic Studies and Procedures*—1 The age of the patient at the time that the convulsions first appeared is of prime importance. Convulsions beginning after the age of 25 or 30 are almost invariably due to a focal lesion, often to tumor

2 The early convulsions occurring in the initial stages of a long-standing case of epilepsy, which now shows only generalized major convulsions, are sometimes found upon careful questioning definitely to have been focal in character

3 Abortive or incomplete attacks, in which only the early part of the convulsive pattern is acted out and the "fit" is arrested spontaneously before becoming generalized, often yield valuable focalizing information that is altogether lacking in the more serious generalized attacks. For instance, a patient who suffers currently with two or three attacks of generalized convulsions a month may experience, from time to time between these attacks, a transient stiffening of the fingers of one hand, a feeling of heaviness in one leg, or a difficulty in expressing himself as fluently as usual.

4 The auras or warnings that often immediately precede generalized convulsions are occasionally of value in establishing the focal nature of epilepsy, especially if the auras present a pattern that is constant in recurrence. For example, bright lights referred constantly to the right-hand fields of vision of both eyes just before a convulsion might well indicate an irritative lesion in the left temporal or occipital lobe

5 The initiating phase in any given attack may also give leads that will help to lateralize or even localize a lesion. Sometimes this will be purely sensory, such as a feeling of "thickness" on one side of the tongue, a "warm" feeling passing down an arm, or a "heavy" feeling in the leg, followed almost immediately by loss of consciousness and a bilateral, nonfocalizing convulsion. Occasionally, the first movement in a truly generalized convulsion may repeatedly and

consistently be a stiffening of one leg, a raising of one arm, a turning of the head always to one side, or a twitching of one side of the face. These may occur just as the patient is losing consciousness or even after he is unconscious and may precede the general fit by only a fleeting second. They could not properly be called "jacksonian" phenomena, but, if they constantly initiate the convulsive pattern, they probably have definite relationship to a "trigger area" in the brain. Even the simple observation that convulsions always begin on one side of the body may be of great value in locating a lesion

6 Postconvulsive sequelae or residual symptoms and signs remaining even a short time after the attack itself has passed may give true focal data. For example, following complete return of consciousness, a patient may, for several hours or days, drag one foot in walking or have a conspicuous difficulty in speaking, although mentally quite clear—signs present at no other time

7 Other symptoms or signs referable to the central nervous system found in association with convulsions should automatically raise the suspicion of a focal lesion. Headache, nausea, blurring vision, weakness, numbness of an extremity, or changes of personality exhibited in a patient having epileptic attacks would constitute strong presumptive evidence that an expanding lesion, such as tumor or abscess, was producing the seizures. All effort should be made to establish the existence of such a lesion—if necessary, by air studies

8 Active pathologic processes elsewhere in the body, such as pulmonary abscess, tuberculosis, syphilis, or any neoplastic disease in a patient suffering with convulsions, should always raise the suspicion of a metastatic lesion of the same type in the brain.

9 Trauma preceding the onset of epilepsy offers presumptive evidence of localized scar tissue or adhesions of the brain, even though the convulsions themselves are generalized and without focal features. This is so because the scar tissue may be present in "silent" areas, such as the frontal lobe, taken up only with the higher psychic functions from which release of sharply localized motor or sensory phenomena is impossible

10 The neurologic examination may show evidences of a localized pathologic process. In addition to the more common signs, such as focal weaknesses and reflex changes, lesser findings, such as suppression of automatic associated movements or focal atrophies, may

contract When such mild stimulation, however, is applied to a certain area of the brain in certain epileptic patients, instead of a focal response being obtained, this mild stimulation sets off a major epileptic attack identical with those experienced by the patient clinically. Such a point in the brain, which we term a "trigger area," may well be looked upon as an epileptic focus and treated in the same way that an anatomic focus is treated.

### Clinical Forms

Clinically, convulsions may be (a) generalized or (b) focal.

(A) *Generalized convulsions* are those that involve all parts of the body simultaneously and equally. They may be "grand mal" seizures in which the patient loses consciousness, falls to the ground, bites his tongue, becomes incontinent of urine and feces, and all parts of his body become involved in violent clonic convulsive movements. On the other hand, the attacks may be the so-called "petit mal" seizures, characterized only by fleeting lapses of consciousness, oftentimes scarcely perceptible. In either case the widespread or diffuse clinical manifestations suggest widespread diffuse pathologic processes within the brain, either anatomic or physiologic. In those cases in which this has been proved to be true, the treatment must come from the medical therapist rather than from the surgeon.

Unfortunately, the problems of etiology and therapy to be solved in these cases of generalized convulsions are more complicated and obscure than those presented by the so-called focal epilepsy to be discussed in the following paragraphs, and, as a matter of fact, are often very little or not at all understood at the present time. For this reason they are too often regarded as "idiopathic" and even as "congenital," without a proper search for the etiologic factor ever having been made.

The term "idiopathic" should, in fact, be used reluctantly and with the thought that it refers not so much to etiology undeterminable as to etiology not yet determined. At present there is afoot a real renaissance of interests in the etiology and mechanism of the epilepsies, and it seems probable that as study continues many of the general convulsions that now appear to be "idiopathic" will be found to have specific clinical syndromes based on constant pathologic factors which can be determined and successfully treated by specific therapy.

(B) *Focal convulsions* are those that pri-

marily involve, or are completely limited to, a certain sharply localized part of the body. As a rule they are produced by one of the discrete focal pathologic processes described in the preceding section of this paper. It is reasonably assumed that if the original focus of irritation be found and eradicated in these cases of focal convulsions the attacks themselves will cease. From this it may be seen that cases of focal epilepsy are essentially surgical problems.

While focal convulsions are practically never produced by generalized pathologic processes, the reverse does not hold true. It cannot be emphasized too strongly that *generalized convulsions may be, and frequently are, produced by exquisitely focal lesions*. A good example of this would be the convulsions produced by brain tumors.

This leads up to the essential diagnostic problem in cases of convulsive disorder.

### The Diagnostic Problem—Methods of Study

The essential diagnostic problem in any given case of convulsive disorder is to determine whether the convulsion is the result of a diffuse pathologic process causing a generally irritable brain, or whether it is caused by a focal pathologic process. The former presents a strictly medical problem, whereas the latter may, in many instances, be treated successfully only with surgery.

Focal convulsions are indisputable evidence of a discrete, localized, irritative lesion of the brain. The classic example is the so-called "jacksonian" fit. Here, for instance, clonic movements first appear in the digits of one hand and pass slowly up the arm, involving progressively the wrist, elbow, shoulder, face, trunk and leg of the same side, and, finally, the entire body in a generalized clonic convulsion accompanied by loss of consciousness and incontinence of the sphincters. With such a convulsion the diagnosis of focal epilepsy due to a focal lesion is easily established.

General convulsions, however, do not rule out a focal lesion. Indeed, generalized convulsions are frequently produced by the most sharply localized lesions, as, for example, brain tumors. Particularly is this true in the later stages of the tumor growth when the entire brain has been indirectly involved and is abnormally irritable. A person observing only a convulsive seizure in such a patient might see no evidence whatever, from the character of the attack itself, that it was pro-

directly from the exposed cortex. The abnormal and characteristic waves obtained in typical cases may permit precise localization of the epileptic focus. Thus, of course, is of extreme value in those cases where there is no gross change in the appearance of the brain (Figs 1a and 1b).

17 Electrical stimulation of the exposed cortex in search of a "trigger area." In a systematic way, stimulation of the exposed cortex is carried out, using a fine bipolar electrode and minimal current—galvanic or faradic. As the investigator stimulates point after point along the various gyri, sharply focalized responses, such as the movement of a single finger, are normally obtained. But if a spot is found which is a so-called "trigger area" for convulsions, its stimulation, even with a weak current, causes a violent convulsion and in typical cases reproduces the exact pattern of the epileptic fit from which the patient seeks relief. Excision of this "trigger zone" should terminate the attacks in favorable cases.

The diagnosis of "idiopathic epilepsy" is permissible only when (1) the disease first appears during infancy or early childhood and (2) when no evidence of a specific or focalized etiology can be obtained by any of the methods of study outlined above. Even then the diagnosis should be considered tentative. It should be made with hesitation and with the same amount of mental reservation as would accompany a diagnosis of "fever—unexplained," for it is unquestionably true that, as a result of improved methods of study and a revival of interest in the subject, many cases of epilepsy that would have been regarded as "idiopathic" (and hence incurable) twenty years ago are today being shown to be the result of a localized, specific lesion for which surgery offers a favorable prognosis.

### Treatment

Theoretically, all generalized nonfocal epilepsy should be treated by medical measures calculated to reduce the irritability of the brain or raise its threshold to irritable stimuli, and all focal epilepsy should be treated by the ablation of the lesion causing the irritation of the brain.

In practice, however, this idealized program is not rigidly adhered to in all instances. It would be unwise, for example, to subject a patient to a major surgical procedure for the relief of convulsions that were mild (those that occurred infrequently, possibly only while the

patient was asleep, and did not in any way interfere with the patient's social or economic life) simply because the attacks had focal features.

All patients suffering with convulsive disorders, however, should be admitted to a neurologic hospital and should be thoroughly investigated along the lines laid down in the preceding sections of this paper under the designation "Minor Diagnostic Procedures." This study should certainly include an electroencephalogram and a pneumoencephalogram. At the completion of these studies, concluding with the pneumoencephalogram, it is possible to divide the patients into three categories:

1 Cases that show no focal or lateralizing symptoms or signs of any sort. These cases must be considered for the time being as nonfocal and, hence, nonsurgical. They can only be treated by one or another of the medical types of therapy to be outlined later.

2 Cases that show gross anatomic lesions in the brain by clinical examination or pneumoencephalography. This group would include depressed fractures, post-traumatic cicatrices with deformity of the ventricular system, and tumors. These cases are unquestionably surgical problems. The tumors offer absolute surgical mandates. The depressed fractures should be elevated to prevent degeneration, with formation of a cicatrix in the underlying brain. And the scars already present should be removed to stop the severe, persistent, and probably destructive irritation to adjacent brain.

3 An "intermediate" group remains showing evidences of focal lesions which are irritative but not grossly anatomic—in which, in other words, there is no compression or distortion of the brain as revealed by pneumoencephalography. The writer feels that all members of this group should be given a thorough trial under medical therapy before any surgical measures are contemplated. Surgery should only be carried out in this group when all medical measures have failed.

(A) *Medical Treatment*—The medical treatment of convulsive disorders consists primarily in the use of anticonvulsive drugs, supplemented by general hygienic and dietary measures. The bromides were first used as specific anticonvulsives in 1858 by Lacocq, and for many years they were the only drugs known to be available for this purpose. In 1912 Hauptman introduced phenobarbital, known generally as "luminal," which was decidedly more potent than bromides had

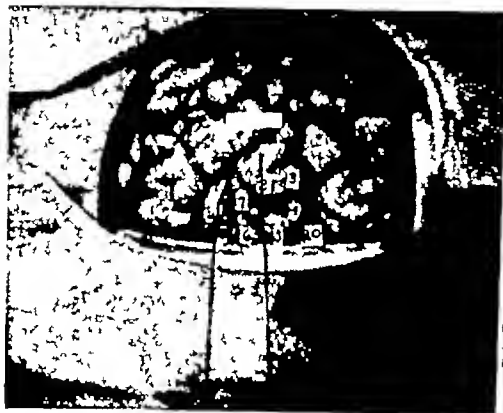


FIG 1a

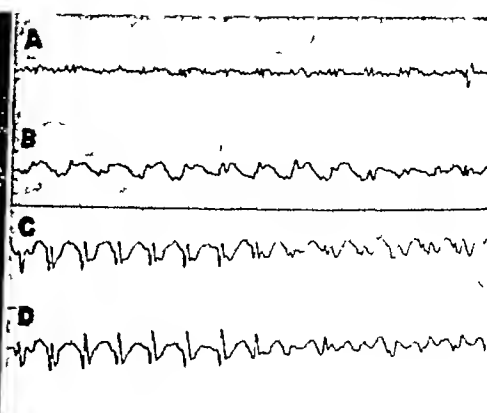


FIG 1b

Fig 1a Showing technic employed in studying the electrocortical potentials of the brain in a search for epileptic focus. The bipolar electrodes can be adjusted to rest lightly against any portion of the cortex.

Fig 1b The graphs show the type of record obtained. (A) Represents essentially normal "brain waves." (B) Shows pathologic waves of slow frequency indicating the presence of a pathologic lesion in the region from which these potentials were obtained. (C and D) Show large slow waves similar to those seen in (B). In addition, there are seen some "spike formations" frequently found in association with convulsive disorders, especially petit mal seizures.

have significance in localizing the etiologic lesion.

11 Blood chemistry should be tested, although spontaneous hypoglycemia (hyperinsulinism) is an extremely rare cause of epileptiform seizures.

12 Roentgen-ray examination often establishes the presence of a focal lesion by showing depressed fractures or by revealing erosions, hyperostoses, or vascular anomalies of the bone. Calcific deposits within the brain itself may indicate the presence of a tumor.

13 Electroencephalography is a recent development whereby minute changes in electric potentials generated by the brain can be recorded and studied. The currents are taken directly through the intact skull by means of small electrodes fastened by collodion to the scalp. It has been found that areas initiating epileptic fits give off abnormal and characteristic waves that are quite different from the waves given off from other normal areas of the brain. This new technic offers promise of great advance in the localization of epileptogenic foci (Fig 1).

14 Pneumoencephalography. A study of epilepsy is rarely complete without an encephalogram or ventriculogram. These are special forms of roentgen-ray study in which the spinal fluid is removed from the ventricles and subarachnoid spaces of the brain and is replaced by air or other gas that shows in

great contrast to the brain itself in roentgen-ray pictures.

These frequently reveal distended or distorted ventricles or abnormalities of the subarachnoid spaces which undeniably establish the site and nature of the pathologic process accountable for the convulsions when all other methods of study have failed. For example, an encephalogram or ventriculogram may be the only way possible to discover, and accurately locate, a congenital porencephalic cyst in an infant having convulsions where the condition would otherwise be regarded as a case of congenital "idiopathic" epilepsy. In the same way encephalograms or ventriculograms often reveal tumors in adults which could not otherwise be diagnosed.

(B) *Major Diagnostic Procedures*—15 Craniotomy with visual inspection of the cortex. This may reveal flat surface lesions that are not revealed by pneumoencephalography. These include adhesions involving the cortex, pia-arachnoid, and dura, and also arteriovenous anomalies of surface vessels. Both of these lesions are frequent causes of convulsive disorders. They do not have sufficient bulk to cast a shadow in the pneumoencephalogram or to distort the ventricular system. In most instances, the only way of confirming their presence is by direct inspection of the surface of the brain.

16 *Electrocorticograms*. These are studies of electrical brain potentials taken



FIG 3 CASE 1 (continued) (A) Note the depressed and retracted scar of cortex which underlay the depressed fracture at the anterior pole of the frontal lobe (indicated by arrows) Markers 1, 2, 3 indicate the primary motor (precentral) convolution. (B) Same area following amputation of anterior pole of frontal lobe containing the scar The patient has had no convulsions since operation

tolerate an occasional attack with little emotional reaction. On the other hand, a highly sensitive, cultivated person undergoes intense mental suffering with each such attack, and many people develop unsocial and psychopathic personalities due to the frustration and shame associated in their minds with the disease. It is obvious, therefore, that no general rule as to when or when not to operate will hold true in all cases, and each case must be decided individually.

Surgery is indicated, in general, if (1) the attacks are socially or economically incapacitating, (2) they are in any way focal, and (3) medical therapy has proved unsuccessful in controlling them.

If surgery is decided upon, then a large craniotomy should be performed, which will allow the major diagnostic procedures above described to be freely carried out, viz (1) visual inspection of the cortex for adhesions or vascular anomalies, (2) study of cortical potentials, and (3) electrical stimulation of the exposed cortex in search of a so-called "trigger area." Should an epileptogenic focus be discovered by any of these three means, it should then be treated in the manner best suited to the individual situation. This will be determined in each instance by the nature of the lesion and its position.

## Results

The postoperative results permit certain generalizations to be made.

In the first place, the more definitely and grossly anatomic the focal lesion that causes the convulsion is, the more successful, as a rule, is the result following its removal. For

instance, the group comprising the depressed fractures and the cortical cicatrices sufficient to produce changes visible in the pneumoencephalogram has a high percentage of complete and permanent cure. The convulsions due to tumors almost completely disappear upon the removal of the offending growth. The 1 patient in my series of cases with a localized venous angioma of the cortex, which was removed "en bloc," has had no convulsions for the two years since the operation.

Few patients in whom the focal lesion was essentially physiologic rather than anatomic have been completely cured of their seizures as a result of operative measures. On the whole, however, they have shown varying degrees of improvement, and 2 such cases have been strikingly successful. Most of the patients themselves feel that they have been definitely benefited and are grateful. In connection with this group it should be remembered that the basic cause of the convulsions in all of these patients is probably a constitutionally low threshold for all forms of irritation and that the various focal points found and treated at operation probably represent simply the secondary "release mechanisms."

## Case Reports

Space will not permit, nor is this the occasion for, a statistical analysis of operative results. This the author hopes to make in detailed form in subsequent reports. A few cases illustrative of the principal types treated by surgical measures, however, follow.

Case 1—V L, woman, aged 28 Depressed fracture right frontal bone in infancy Generalized



FIG 2 CASE 1 Generalized convulsions following depressed fracture of right frontal bone. The arrow indicates fracture. Note also how the cortical cicatrix developing beneath the fracture is pulling the anterior pole of the right lateral ventricle forward.

been and caused less unpleasant reaction. In 1938 Dr Tracy Putnam, formerly of Boston and now director of the Neurological Institute of New York City, and Dr Houston Merritt, of Boston, brought out an entirely new drug—sodium diphenyl hydantoinate—generally referred to now as “dilantin,” which has proved phenomenally successful as an anticonvulsive and marks a further great advance in the medical treatment of convulsive disorders. It is estimated that 60 per cent of patients suffering with convulsive disorders were completely or greatly relieved by the use of luminal and that an additional 60 per cent of those unaided by luminal have been cured or greatly benefited by the drug, “dilantin.”

The ketogenic, the high-protein, the low-salt, and the low-fluid diets have all benefited certain patients from time to time and should certainly be given a trial, as indicated, in association with the more powerful pharmaceutical agents.

(B) *Surgical Treatment*.—In spite of the most intensive and best directed medical care, a certain number of patients of the “intermediate” group will continue to have convulsions.

The selection from this group of those patients who should undergo surgical exploration and the major diagnostic procedures outlined above is one that depends on many variable factors different in each individual case. The frequency of the convulsions is one such factor. Obviously, if the attacks occur only once every two or three months, there is less reason for surgery than if they occur two or three times a week. Similarly, the severity of the attacks constitute a factor. Should these be accompanied by falling and serious injury, there is more reason for surgical interference than if the attacks are preceded by a warning that permits the patient to avoid injury. The time of day or night in which the attacks occur is also important. If the attacks occur while the patient is asleep, as they do in many instances, they do not interfere in any way with the patient's social or economic status. On the other hand, if they occur during the daytime, they are apt to make him a social and economic outcast.

The effect of the attacks upon the patient's ego and personality as a whole is likewise important. Many dull, phlegmatic individuals

**Neurologic Examination** There was a soft, irregular defect in the skull in the left parieto-occipital region which was depressed about  $1\frac{1}{2}$  cm. below the general level of the skull. There was slight hypoplasia, weakness, and hyperreflexia of the right arm and leg. Examination otherwise was essentially negative.

**X-Ray Examination** The skull showed a large bone defect in the left posterior parietal region (Fig 4). Encephalograms showed cortical atrophy in the region of the bone defect, with the atrium of the left ventricle apparently pulled toward the defect (Fig 4).

**Laboratory Examinations** Essentially negative.

**Operation** October 27, 1937—left parieto-occipital craniotomy. There was disclosed at the site of the bony defect a dense cicatrix involving dura, pia-arachnoid, and underlying brain. A "core" of tissue was removed about 2.5 to 3 cm. in diameter, extending from the dura directly down and into the ventricle, containing the cicatrix (Fig 5). The defect in the dura was closed with a piece of Cargile membrane.

**Postoperative Course** The immediate postoperative course was uneventful, and she was discharged from the hospital on the nineteenth postoperative day. At the time of her discharge she was receiving luminal, 1 grain three times a day. This has been gradually reduced to  $\frac{1}{2}$  grain three times a day.

She has had no attacks of any sort since her operation two and a half years ago. She has been working as a secretary.

**Case 3—A P, man, aged 39. Tuberculoma of the left cerebrum with focal seizures. Craniotomy with excision of isolated tuberculoma. No convulsions since operation (Fig 6).**

**History** This patient was an insurance broker, who was admitted to the hospital (New York Post-Graduate) in March, 1936, because of focal convulsions involving the right hand and arm. The first attack had occurred in November, 1933. Similar attacks had occurred in January, March, and June, 1934. From June, 1934, until March, 1935, attacks occurred every six weeks. From March, 1935, to March, 1936, attacks occurred every two weeks. An attack in February lasted two hours. Recently the right hand had come to feel "heavy." In 1927, six years before the onset of his convulsions, the patient had spent six months in a sanitarium at Saranac, New York, with a diagnosis of pulmonary tuberculosis, but he had been discharged with process apparently arrested.

**Neurologic Examination** Tendon reflexes were slightly exaggerated in the right upper extremity. Otherwise the neurologic examination was entirely negative.

**X-Ray Examination** X-rays of the skull were negative. X-rays of the lungs showed "fibroid phthisis."

**Laboratory Examinations** Essentially nega-

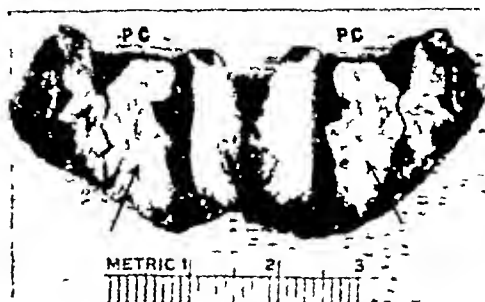


FIG 6 CASE 3 Focal convulsions caused by tuberculoma. Illustration shows midsection through block of tissue containing one small, discrete tuberculoma, removed from the post-central "thumb" area. This patient has had no convulsions since operation.

tive. Tubercular bacilli were found in the sputum. Guinea-pig inoculation was not done.

**Operation** February 13, 1936—left craniotomy with excision of small, single, discrete tuberculoma from the "thumb area" of the left cerebral cortex (Fig 6).

**Postoperative Course** The patient showed slight general reaction to the operation. There was never any evidence of meningitis. However, following the operation he did have slight transient aphasia and rather marked paresis of the fingers of the right hand. Both of these rapidly improved. At time of discharge from the hospital on the eighteenth postoperative day, the aphasia had cleared up except for a certain slowness in speech, and function had largely returned to the right hand except for finely, coordinated movements. These defects persist in minor form to the present time.

The patient has had no convulsions of any sort since his operation four years ago. He has not been taking any medication.

**Case 4—K C, girl, aged 4. Venous angioma of right cerebrum with generalized convulsions. Craniotomy and block excision of angioma. No convulsions since operation (Figs 7 and 8).**

**History** The patient was a small girl who had suffered from convulsions for fifteen months. At first these involved only the left arm and leg, but during the past month they had been generalized.

At first the attack occurred once every two to six days, but during the last month before admission they occurred two to three times a day, at intervals of one to two days. On one day she had four attacks. The patient had had no medication for her attacks.

**Neurologic Examination** The child was alert and active. The examination was essentially negative.

**X-Ray Examination** The plain films showed fine parallel linear streaks of calcification confined to the medial portion of the right parietal and occipital lobes of the brain, typical of a



FIG 4

FIG 4 CASE 2. Convulsions produced by cortical cicatrix not accompanied by depressed fracture. X-rays of skull show large, longstanding, bony defect at site of original injury. Ventriculogram shows the occipital horn of left lateral ventricle being pulled in the direction of the bony defect by contraction of the cortical cicatrix.



FIG 5

FIG 5 CASE 2 (continued). The "core" of scar tissue extending from the dura inward to the ventricle was reamed out. This patient has been free of convulsions since operation.

convulsions for past three years. Exploratory craniotomy disclosing dense, cortical cicatrix beneath small depressed fracture. Amputation anterior pole of right frontal lobe containing cicatrix. No convulsions since operation two years ago (Figs 2 and 3).

**History.** The patient received a depressed fracture in the right frontal bone when she was a small child. She recovered from the accident, but no attempt was ever made to elevate the depressed fracture. Two and one-half years before her admission to the hospital in March, 1938, the patient began to have generalized convulsions without any focal features whatever. These averaged about one major attack every two weeks, but at times she had had attacks each day and on one day had had as many as four attacks.

The patient had received medication intermittently during this time, but there had been no consistent treatment, and no record of the quantities of medication was actually kept.

**Neurologic Examination.** Entirely negative.

**Laboratory Examinations.** Negative.

**X-Ray Examination.** Small, old, depressed fracture of the right frontal bone. Encephalogram showed a mild right frontal porencephaly with a slight "wandering" of the right frontal horn toward the site of the depressed fracture (Fig 2).

**Operation.** March 8, 1938—right frontal craniotomy under local anesthesia. There was a sharp, jagged break in the inner table of the right frontal bone, and directly beneath this there was a dense, cortical cicatrix. The an-

terior pole of the frontal lobe containing the cicatrix was amputated (Fig 3).

**Postoperative Course.** The postoperative course was smooth and uncomplicated, and the patient left the hospital on the fifteenth postoperative day.

Patient has had no convulsions of any sort since the operation. She is regularly employed. She has taken no medication since her discharge from the hospital.

**Case 2—F, woman, aged 23.** Posttraumatic cicatrix of left occipital lobe since age of 5 months. Generalized convulsions since 16 years of age. Excision of cicatrix. No convulsions since operation (See Figs 4 and 5).

**History.** The patient's birth was uncomplicated and early development normal. At the age of 3 months she fell out of her carriage and struck the left parieto-occipital region. She was never unconscious. There was a large hematoma at the site of the trauma which eventually disappeared. As time passed, the mother noticed that bone of the skull was gradually absorbed at the point of injury and never reformed.

At the age of 16 years the patient had her first convulsion—a typical grand mal seizure without focal features. During the next four years these occurred about once every three to six months. About three or four months prior to operation there occurred an abrupt increase in the frequency of the convulsions so that these averaged three or four each week. Under luminal,  $\frac{1}{2}$  grain three times daily, she had one attack in two weeks. The patient was left-handed.

vulsions, frequently becoming generalized and uncontrolled by luminal. Two months before admission she complained of a persistent sensation of "numbness" in the left arm. On one or two occasions, transient weakness of the left leg was reported, but this cleared up.

**Neurologic Examination** There was slight hyperreflexia of left arm and leg and a questionable weakness of left hand and arm. Otherwise the examination was essentially negative.

**X-Ray Examination** Plain x-rays of the skull were negative. Pneumoencephalograms were reported negative except for slight left-sided cerebral atrophy, suggesting cerebral arteriosclerosis, most marked along the fissure of Rolando.

**Operation** April 8, 1938—right parietal exploratory craniotomy. A small meningioma was found, arising from the falx in the postcentral region. Complete removal was effected (Fig 9).

**Postoperative Course** The postoperative course was uncomplicated. She was discharged ambulatory, twelve days postoperative.

**Case 6—R. G., boy, aged 8** *Convulsions since the age of 17 months. Slight weakness left arm and leg since then. Small, calcified subcortical cicatrix lying within the primary motor gyrus revealed by roentgenograms. No convulsions since operation. Return of power to left arm and leg (Figs 10 and 11).*

**History** The patient was a young boy suffering with convulsions. From the time he was 17 months old until he was five years old, the attacks were limited to his left hand and arm. From the age of 5 until 7 the attacks involved the entire left side of the body without loss of consciousness. During this time they usually occurred daily. Since the age of 7, the seizures have been generalized and accompanied by loss of consciousness. During this time they occurred three to four times daily, in spite of supervised luminal therapy.



FIG 9 CASE 5 The small benign tumor here pictured (meningioma) was removed from Case 5. Exploration was performed, in spite of the fact that encephalograms showed only cortical atrophy, because this patient's convulsions were so focal and constant in pattern.

Coincident with the onset of the convulsions, the parents had noted a slight left-sided paresis. This was comparatively slight and stationary, until recently, but lately had become rapidly and progressively worse.

**Neurologic Examination** The patient was a pale, undernourished, sickly-looking youngster who spent most of his time in bed. There was a moderately advanced, spastic left hemiparesis, with considerable atrophy of muscles and bony deformity of the left foot. The patient dragged his left foot in walking.

**Electroencephalograms** These revealed abnormal large, slow waves at 2 to 6 per second, together with wave-spike contours at 2 to 3 per second over the central and postcentral areas of

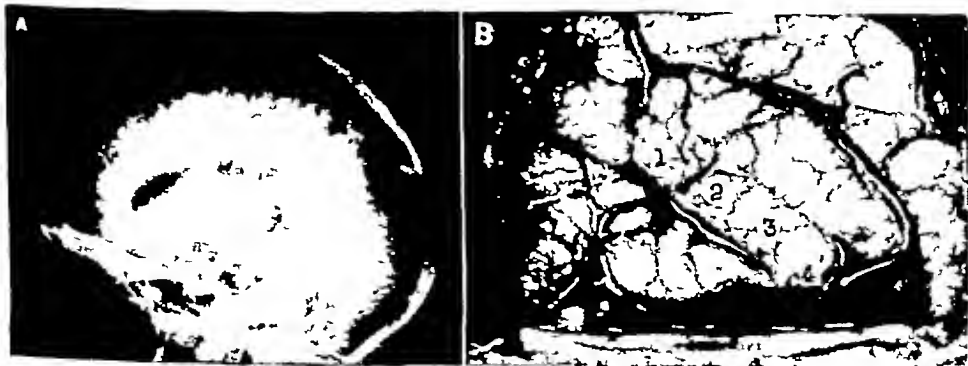


FIG 10 CASE 6 Focal convulsions associated with a small calcified, subcortical cicatrix. (A) Ventriculogram shows the cicatrix (arrow). Note also that the roof of the ventricle is beginning to be pulled upward by the contraction of the cicatrix. (B) Photograph of the cortex taken at operation. The numbers indicate the primary motor (precentral gyrus). Just to the left of the numbers can be seen the cortical incision through which the calcified scar was removed.

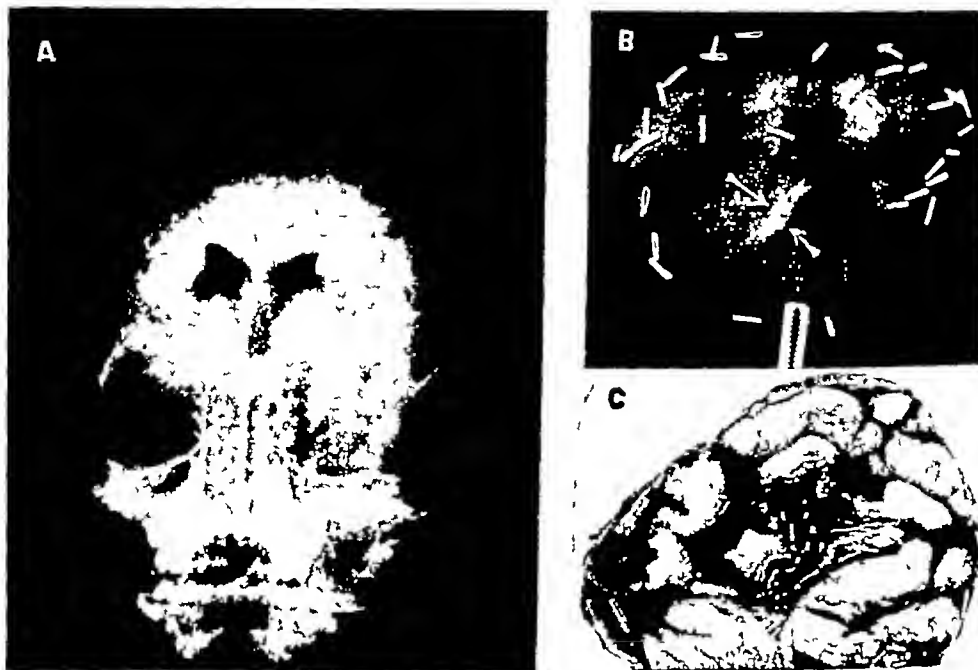


FIG 7 CASE 4 Generalized convulsions due to venous angioma of right parietal cortex. (A) Ventriculogram showing the fine parallel lines in the parietal cortex, which indicated calcification in walls of the angioma. (B) X-ray taken through the excised block of cortex containing the angioma, which shows again the parallel lines of calcification in its walls, indicated by the arrows. Note silver clips on blood vessels. (C) Photograph of the excised block of cortex containing the angioma.



FIG 8 CASE 4 (continued) This is the patient from whom the angioma shown in Fig 7 was removed. She has had no convulsions during the two years which have elapsed since her operation.

venous angioma (Fig 7A and B). Encephalograms showed the same calcification seen in the plain films but were otherwise normal.

**Laboratory Examinations** Essentially negative.

**Operation** January 27, 1938—right parietal craniotomy. The operation disclosed and the surgeon removed "en bloc" a venous angioma from the parietal lobe (Fig 7B and C).

**Postoperative Course** The postoperative course was smooth, and the child was discharged from the hospital on the twelfth day after her operation. At time of discharge the mother was instructed to give the child luminal,  $\frac{1}{4}$  grain three times a day, but she has been careless about this, and months have gone by without the patient receiving any medication whatever.

The child has had no attack of any sort during the two years since the operation and is today completely symptom-free (Fig 8).

**Case 5**—M. V., woman, aged 50. Meningioma arising from the falx producing focal convulsions. Pneumoencephalogram negative for tumor. Exploratory craniotomy. Disclosure and total removal of tumor (Fig 9).

**History** This Italian woman had suffered for approximately two years with left-side con-

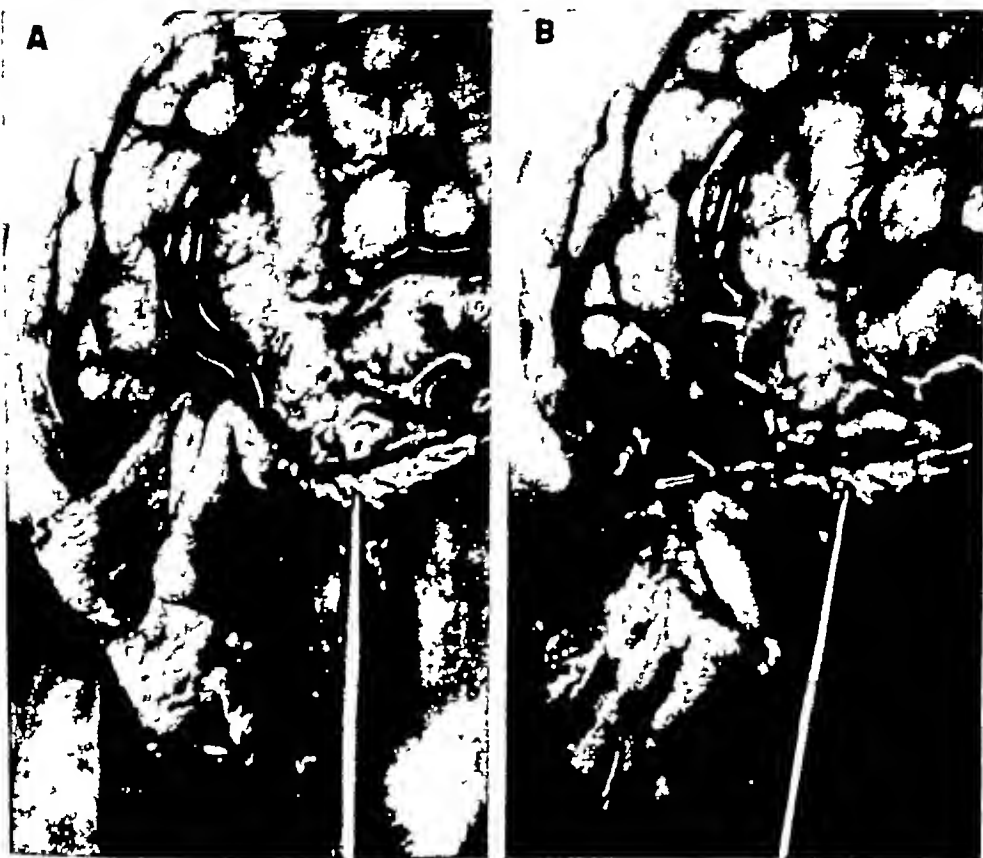


FIG 12 CASE 7 Focal convulsions involving primarily the right arm due to corticodural vascular anomaly (A) Shows the abnormal attachment of the dura to the cortex at the "arm area," as revealed at operation. (B) Shows the same view of the cortex after the abnormal attachment has been divided. There was a marked improvement after the operation

*Case 8—A M B, girl, aged 14 Left-sided jacksonian convulsions from the age of 5 Generalized grand mal convulsions since the age of 7 Four or five grand mal seizures daily and twenty-five to thirty grand mal seizures each night for the past six years Exploratory craniotomy with lysis of anomalous pachionian granulation Since operation, marked improvement*

*History* At the age of 5, this child began to have left-sided jacksonian convulsions Since 7, these have been generalized, without focal features, have increased steadily in violence and frequency From the age of 8 until 14, when she was admitted to this hospital, the patient had averaged four to five generalized grand mal convulsions, with falling and injury, each day and twenty-five to thirty similar seizures each night She has had as many as fifty-four grand mal seizures in one day During the first week after her admission to the medical wards of this institution in October, 1938, the patient averaged ten to fifteen generalized convulsions

daily Twenty-four hours before her transference to the surgical service, she went into a status epilepticus and was in this condition when operated upon

During the six years just described, the patient had been on massive doses of luminal and bromides which were administered under the personal direction of a neurologist on the staff of this hospital.

*Neurologic Examination* The patient was in an intermittent status epilepticus During her quiet intervals, she could be aroused from deep stupor but was unable to cooperate or answer questions intelligibly There was a slight right hyperreflexia and a slight right lower facial weakness There was a unilateral Babinski Convulsive movements seemed to start with abduction of the left arm at the shoulder and would quickly involve the entire left side and then the entire body

*Laboratory Examinations* Negative

*X-ray Examinations* There was a normal



FIG 11 CASE 6 (continued) This is the boy from whom the calcified cicatrix shown in Fig 10 was removed. Prior to operation he was suffering three to four grand mal seizures daily in spite of heavy luminal therapy. Since operation he has had no attacks.

the right cerebrum and to a lesser degree in similar position on the opposite hemisphere.

**Roentgenograms.** Plain films of the skull showed a small deposit of calcium about 1 cm in diameter in the right central region, about 1 to 2 cm. to the right of the midline and about 1 to 2 cm. below the surface of the cortex (Fig 10A). The pneumoencephalograms showed an outpouching of the right ventricle toward the region of the calcific deposit above referred to, which indicated that the latter was a scar.

**Operation.** June 10, 1939—right parietal craniotomy, primary motor gyrus incised, and subcortical, calcified cicatrix removed. By precise measurements from suture lines, as revealed in the roentgenograms, and on the skull itself a point on the surface of the brain was determined, which, it was felt, was situated directly over the calcific deposit seen in the x-rays. Electric stimulation of the cortex then revealed that the point lay directly on the primary motor gyrus in the hand area. With considerable trepidation this gyrus was incised lengthwise (Fig 10B), for a distance of 2 to 3 cm. and to a depth of 2 to 3 cm. Here the operator found a firm, irregular shaped, calcified cicatrix, which he removed (Fig 10B).

**Postoperative Course.** The immediate postoperative course was quite smooth, and he was discharged on the thirteenth postoperative day.

He has had no attacks of any sort during the eleven months since the operation, in spite of the fact that he has long ago stopped taking any medication.

In addition, there has been an entirely unexpected and considerable improvement in motor power and general use of his left arm and leg. His mother states that he is constantly on the go and that he is able to "lick both of his brothers either at wrestling or fighting" (Fig 11).

**Case 7**—A G., boy, aged 14. Corticodural vascular anomaly, arm area, left, producing at first focal, later generalized, convulsions. Marked improvement following operation (Fig 12).

**History.** Immediately after birth this patient had a generalized convulsion. He had another when he was 1 year old. From then until he was six, he averaged one or two generalized seizures each year. After the sixth year the convulsive movements were seen to start in the right arm and gradually became confined to the right side of the body, although they were still accompanied by loss of consciousness.

These seizures lasted three to five minutes, following which the patient would sleep for an hour or two. The attacks were usually preceded by a sensory aura affecting the right hand, and were followed, in many instances, by residual motor weakness of this member. From the age of 7 until his present admission to this hospital at the age of 14, the attacks have recurred on the average of once a week.

The patient had been receiving luminal (apparently  $\frac{1}{4}$  grain twice daily) under the personal supervision of a member of our staff, for the past three months, without improvement in the frequency or severity of the attacks.

**Neurologic Examination.** There were a few slight signs of pyramidal tract involvement in the left arm and leg.

**Laboratory Examinations.** Negative.

**X-ray Examination.** X-rays showed a normal skull. Pneumoencephalograms showed slight cerebral hypoplasia on the left.

**Operation.** February 4, 1939—left craniotomy. The operation disclosed a corticodural vascular anomaly, with pachionian granulations arising from the cortical arm area (Fig 12A). This was divided and the cortex freed (Fig 12B).

**Postoperative Course.** Immediately following operation, the patient was placed on luminal,  $\frac{1}{4}$  grain three times a day—that is  $\frac{1}{4}$  grain less than his preoperative medication. From February 4, 1939, until October 5, 1939, the patient had only two attacks—one of these after he had stopped taking his luminal for three weeks. This represents an attack on the average of once in four months, as compared with the preoperative average of once every week. The patient has not answered requests to return to the clinic or letters of inquiry since February 1939.

# Symposium on Urologic Disease and Hypertension

## RELATION OF KIDNEY TO BLOOD PRESSURE

HERMAN O. MOSENTHAL, M D, New York City

**HYPERTENSION** is recognized as the No. 1 threat to life in persons of middle age and older. It is also known that individuals with a low blood pressure will outlive those with a higher, so-called normal, arterial tension gaged by average standards. An attempt will be made to analyze the part the kidneys play in the production of hypertensive states.

### Normal Blood Pressure

A blood pressure of about 100 systolic and 70 diastolic, as found in children 10 years old, is the ideal pressure in man at any age, for it serves to furnish a tension of 30 to 40 mm. of mercury in the proximal capillaries, which is all the body is capable of utilizing for the carrying out of its metabolic processes. In the first place, a higher blood pressure is wasted power because no matter what the arterial tension may be, it is throttled down to the 30 to 40 mm. level as the proximal capillaries are reached. In the second place, it puts strain upon the arteries, the arterioles, and the heart, causing hypertensive disease whose intensity is in direct proportion to the height of the diastolic pressure.

### Average Blood Pressures

It is an accepted fact that blood pressure rises with aging. The figures by decades from Hunter's tables of average normal blood pressures show this trend:

Age	Systolic Pressure	Diastolic Pressure	Pulse Pressure
10	103	70	33
20	120	80	40
30	123	82	41
40	126	84	42
50	130	86	44
60	135	89	46

This elevation of arterial tension has usually been attributed to arteriosclerosis—that is, a diminution in elasticity and an increasing rigidity of the arteries. If this were the sole reason for the physiologic changes in blood pressure characteristic of growing older, there should be a rise in the systolic pressure while the diastolic pressure remained the same or

even diminished. The actual figures, however, show that both the systolic and diastolic pressures increase with age. It is true that the systolic becomes more elevated than the diastolic and that, consequently, the pulse-pressure values increase, but the fact remains that the diastolic pressure does become greater and that this cannot be explained on the basis of arteriosclerosis.

The diastolic pressure rises because of some other factor. It is tempting to assume that renal ischemia with an overproduction of renin, as suggested by Goldblatt's<sup>1</sup> brilliant experiments, may be the cause.

The conclusion is made that as a rule there are two influences that, with advancing years, elevate the blood pressure above the normal in most persons. One of these is arteriosclerosis, the other, an unknown factor that may reside in the kidney.

### Renal Disease Is Not the Sole Cause of Hypertension

Hypertension is often regarded as an entity with a unitarian etiology. Since the publication of Goldblatt's experiments, the trend is to ascribe the reason for an elevated arterial pressure to the kidney. Such a blanket conception for the origin of a permanent rise in blood pressure has led to the performance of many radical operations on the urinary tract which are not all justified.

The hypertension called essential hypertension and the hypertension due to renal disease (as we know from the observation of nephritis) are characterized by an elevation of both systolic and diastolic pressure. Besides urinary tract involvement, overactivity of the suprarenal cortex, pituitary basophilism, increased intracranial pressure, and mitral stenosis must be considered. Coarctation of the aorta also produces a blood pressure of this type, but only in the upper extremities. Consequently, it can be appreciated that an elevation of systolic and diastolic pressures in some cases is not associated with kidney impairments.

A common error is to diagnose the case with a high systolic and a low diastolic pressure as secondary to disease of the urinary tract. A

Symposium read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 9, 1940.

skull Encephalogram showed slight left-sided cerebral hypoplasia

Operation November 1, 1938—right parietal craniotomy The cortex appeared to be normal, except for the presence of an unusually large superior anastomosing vein and an unusually wide and dense pachionian granulation arising from the motor area. The pachionian granulations were divided, thus freeing the cortex from its dense attachment to the dura

Postoperative Course The postoperative course was smooth and uncomplicated, and the patient was discharged on December 8

Since the operation she has been receiving luminal,  $\frac{1}{2}$  grain morning and evening On this medication during the sixteen months since her operation, she has experienced only two generalized convulsions during the daytime, both of these occurring on the same day At night she has regularly five or six mild left-sided transient spastic states, usually lasting a few seconds and usually without loss of consciousness While this patient is not completely cured, there has been a tremendous improvement, and her attacks no longer interfere with her daily social activities

## Conclusions

The neurosurgical approach to the problem of epilepsy has been reviewed under the following subject headings

- (1) The present-day point of view
- (2) Etiologic factors
- (3) Clinical types
- (4) The diagnostic problem
- (5) Diagnostic methods—(a) minor and (b) major
- (6) Treatment of the epileptic—(a) medical and (b) surgical
- (7) The selection of patients for surgical treatment
- (8) The results of surgical treatment, with illustrative cases

The paper is intended not so much to report "results" as to inform the physician working in other fields of medicine that there is afoot, today, a revival of interest in, and an intensified attack upon, the old problem of epilepsy, with results that are at least encouraging

## HEALTH INSURANCE IN CALIFORNIA

The figures of service by the California Physicians' Service and payments therefor have been broken down and classified for October, 1940, and published in *California and Western Medicine* for February

During October, when there were 18,561 beneficiary members in the service, there were 3,188 patients treated, representing 17.2 per cent incidence of illness among the membership during the month The sum of \$21,077.90 was disbursed to 1,441 doctors in payment of 15,614 units of service rendered, an average payment per doctor of \$14.63 The average number of units of service rendered per doctor was 10.8 and the average number of units of service rendered per case was 4.9 The unit value paid for the month was \$1.35

The distribution of units of service rendered during October was as follows 67.03 per cent

for general medical care, 14.08 per cent for surgical care, 7.03 per cent for x-ray services, 6.24 per cent for laboratory procedures, and 5.62 per cent for refractions

The distribution of patients by doctors was as follows 743 doctors saw 1 patient each, 312, 2 each, 163, 3 each, 74, 4 each, 45, 5 each, 34, 6 each, 21, 7 each, 20, 8 each, 9, 9 each, 6, 10 each, 6, 11 each, 2, 12 each, 4, 13 each, and 2, 14 each

It continues to be apparent that the distribution of patients is widely scattered among professional members and that, in proportion to the present beneficiary membership, a substantial percentage of professional members are participating The method of writing checks during the past few months has permitted the observation that a substantial number of new doctors participate each month

## MILITARY SURGEONS' MEETING

The Metropolitan New York Chapter Association of Military Surgeons of the United States held a meeting and conference on U S Public Health Service and Medico-Military Medicine on April 19, 1941, at Marine Hospital, Ellis Island, New York Those participating included Rear Admiral James C Pryor, MC, USN (Ret.), Medical Director C C Pierce, U S Public Health Service, Captain Edward C White, MC, USN, Medical Director E R Marshall, U S Public Health Service, Medical Director A R Sweeney, U S Public Health Service, Colonel Samuel Adams Cohen, Med-Res U S Army, and Lieutenant-Colonel Edgar Erskine Hume, MC, U S Army

## A KINDNESS ALL AROUND

Many of the local banks will readily make loans to patients to enable them to pay medical bills While many persons will not be able to negotiate such loans because their credit rating will not stand up under investigation and although not all banks have advertised this service, nevertheless it is advisable for members to discuss this matter with their local bank and to supply themselves with necessary forms

By referring the patient directly to the personal loan department of the bank, particularly if the patient is known to be a sound and reliable credit risk, the physician will have done a favor to all parties concerned

—Westchester Medical Bulletin

that some of the adrenal cortex must remain to enable renin to exert its pressor effect, that, if sufficient normal kidney tissue exists, the action of renin will be set aside, and that hypertension ceases after the removal of an ischemic kidney provided the other kidney is normal.

Renin is an enzyme contained in the kidneys, without pressor properties, an "activator," contained in the blood, is required to transform renin into "angiotonin," a highly active pressor substance, after a time angiotonin ceases to act—this is presumed to be due to the development of an "inhibitor" (Page, Page and Helmer<sup>4,5</sup>). The probability of the formation of an inhibitor by normal kidney tissue to the pressor activity of renin has been previously expressed in Goldblatt's experiments and verified by the observations of Fasciolo, Houssay, and Taquni,<sup>6</sup> as well as those of Solandt, Nassim, and Cowan.<sup>7</sup> The effect of renin on blood pressure consequently depends upon its combination with an activator to form a pressor substance and its control by an inhibitor developed by the kidney. If a part of these materials—renin and inhibitor—can be isolated in the urine, it may prove possible to assay them and, for the control of hypertension, to extirpate only the kidney that eliminates a preponderance of renin, allowing the kidney with an excess of inhibitor to remain. This may prove to be feasible and would solve the question of how applicable unilateral nephrectomy is in any given case.

The portion of the kidney responsible for the formation of renin has not been identified. The first suggestion in regard to this comes from Goormaghtigh,<sup>8</sup> who describes groups of special cells in the afferent glomerular arterioles which are in close contact with the lumen of these vessels. From their appearance he concludes that these cells have an endocrine activity that is related to the production of the hypertensive substance present in the ischemic kidney. Graef and Smith<sup>9</sup> were able to demonstrate these cells in the human kidney, they state that the acceptance of the pressor influence of these cell groups in renal ischemia and other hypertensive conditions requires further study. This explanation for the production of renin may account for the fact that those conditions, such as chronic nephritis or renal ischemia, which affect the afferent glomerular vessels first, develop hypertension more frequently than those diseases, such as pyelonephritis, which damage the distal part of the nephron

first and involve the afferent glomerular arterioles last.

Other tissues than the kidneys may be responsible for the production of pressor material. This is an important point with regard to the production of hypertension in human beings. Thus far, this subject has received scant attention but the experiments of Ogden and his co-workers<sup>10</sup> show that an elevation of blood pressure may be produced in dogs by limiting the blood flow to the gravid uterus. Such extrarenal sources of pressor substances may play a part in human hypertension, and it is obvious that this field has not been thoroughly explored.

A further possibility, for which there is some evidence, is that other pressor materials than renin, successfully isolated by Page and his co-workers, may emanate from renal tissue.

### Urinary Tract Disease and Hypertension

*Nephritis*—In chronic diffuse glomerulonephritis with an initial albuminuria, hypertension usually develops before renal insufficiency, and death more often results from hypertensive effects than from retention uremia (Mosenthal and Lander<sup>11</sup>). There is a high incidence of hypertension in the mild persistent chronic nephritis following acute nephritis (Payne and Illingworth<sup>12</sup>). The toxemias of pregnancy in subsequent years, usually after a considerable latent period, are prone to become hypertensive (Herrick and Tillman<sup>13</sup>). With these reports in mind and anticipating what will be mentioned in the next two sections, it becomes evident that chronic nephritis entails hypertension much more frequently than does either pyelonephritis or obstructive lesions in the urinary tract.

*Pyelonephritis*—The sequel of pyelitis, pyelonephritis, is now recognized as an exceedingly common disease. About one-third of the cases hitherto diagnosed as chronic glomerulonephritis are, in reality, chronic pyelonephritis. Longcope<sup>14</sup> called attention to the frequent concurrence of hypertension and chronic pyelonephritis. The incidence of hypertension in pyelonephritis is less common than in nephritis, which may be seen from these statistical notations—of 30 cases of severe pregnancy pyelonephritis in ten to eighteen years, only 2 showed an increased blood pressure (Crabtree and Prien<sup>15</sup>), five to ten years after infection, a high percentage of 45 cases of pyelonephritis contracted during pregnancy suffered considerable kidney damage, but only 6 out of the 45 had an elevated

loss of elasticity throughout the greater part of the arterial tree (arteriosclerosis, old age) or a large pulse volume (heart block or any condition associated with an extremely slow heart rate, aortic insufficiency, hyperthyroidism, arteriovenous aneurysm, or paroxysmal hypertension with tumors of the adrenal medulla) is commonly responsible for such a blood pressure and is often regarded in the same light as essential, or urinary tract, hypertension in which the diastolic pressure is elevated and really constitutes the main threat to longevity

The fact that a pure type of hypertension is rarely found must be considered in the interpretation of every blood-pressure reading. Thus, in an older person with arteriosclerosis that results in a rise of the systolic pressure only, there may also be prostatic obstruction that elevates not only the systolic but also the diastolic pressure. It is evident that the analysis of every blood pressure reading becomes an exceedingly intricate and important problem, especially if the management of the urinary tract is to be guided thereby

This section cannot be regarded as complete without a consideration of "essential hypertension." This term evolved when it was observed about 1910 by a number of clinicians, among whom were Clifford Allbutt and Theodore Janeway, that a rise in blood pressure was not a compensatory process for a diminution in kidney function. The idea came into being that the hypertension was a primary process followed, because of the strain it inflicted upon the blood vessels, by a widespread arterio- and arteriolosclerosis. It has been known for a long time that at autopsy the kidneys are more extensively involved than any of the other organs. This has been used as an argument that renal ischemia is the cause for the hypertension. However, occasional hypertensive cases have been reported in which the kidneys were completely normal, and it must be recognized that at autopsy we see only the end result and not the beginning of the stress that the hypertension has imposed upon the arteries and arterioles over a long period. Under the circumstances it would be hazardous to be certain as to which was the primary condition. In Goldblatt's experiments, when extreme compression was put upon both renal arteries and a high blood pressure was produced, the blood vessels throughout the body which were exposed to the impact of the hypertension showed malignant sclerotic changes, but the arterial system of the kidneys which was not subjected to an

increased pressure because of the renal artery occlusion was not affected. No further proof is needed to show conclusively that hypertension will result in arteriosclerosis. Under the circumstances and until more convincing facts are brought forward, it seems justifiable to subscribe to the opinion of the famous German pathologist, Fahr,<sup>2</sup> that hypertension may come about without any anatomic lesions existing in the kidney, the so-called essential hypertension, and that as the elevated blood pressure persists a more or less marked secondary renal arteriosclerosis develops. On the other hand, primary arteriolosclerosis of the kidney does occur and, when sufficiently extensive, entails hypertension as a secondary phenomenon.

The renal lesion in essential hypertension, regardless of whether the kidney is primarily or secondarily involved, is a narrowing through arteriolosclerosis of the afferent glomerular arterioles. It is hard to conceive that the compensatory circulation evoked by such operative procedures as nephro-omectomy will replace an occlusion of the afferent glomerular arterioles, which are terminal vessels for the glomeruli.

A new note is injected by Blackman's<sup>3</sup> observations that in hypertensive disease the main renal arteries are narrowed in most instances, thus duplicating the lesion responsible for the production of experimental hypertension produced by renal ischemia. It might be that in such cases various forms of nephropexy would remedy the renal ischemia and relieve the hypertension, though the experimental efforts in this direction are not conclusive. It is very important that the observations of Blackman be checked by further series of cases to determine whether or not obstruction of the main renal arteries is, possibly, the prevalent cause of essential hypertension.

### Kidney and Hypertension— Experimental Results

Goldblatt's successful production of a sustained elevation of blood pressure through renal ischemia and his subsequent numerous, well-conceived experiments have enabled him and his co-workers to clarify the hypertension problem a great deal. Some of the facts that Goldblatt has established are that occlusion of the main renal artery results in an overproduction of renin (a pressor substance demonstrated by Tegerstedt and Bergmann in 1898), that the nervous system plays no part in the elevation of blood pressure,

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## A UROLOGIC STUDY OF DIABETIC WOMEN

### A Report on the Associated Findings of Hypertension

NATHANIEL KUTZMAN, M. D., ERNEST M. WATSON, M. D., and BYRON D. BOWEN, M. D., Buffalo, New York

IT IS generally recognized that infection, even though it be mild in character, may affect diabetic persons adversely. We have observed that many diabetic patients, although free from urologic symptoms, have pus and organisms in their urine. It has also been noted that many have hypertension. In an effort to obtain further information regarding the relationship, if any, of these facts, the following study was undertaken.

A great impetus was given to the study of certain types of hypertension of renal origin by the experimental work of Goldblatt,<sup>1</sup> who was able to produce hypertension by the partial occlusion of the renal arteries causing an ischemia of the kidney. Clinical corroboration of this experimental observation has been recorded by Longcope,<sup>2,3</sup> McCann,<sup>4</sup> Mackenzie,<sup>5</sup> Nesbit,<sup>6</sup> and many others.

Further stimulus was given to the urologic interest in hypertension by the work of Weiss and Parker,<sup>7</sup> who demonstrated in great detail, and from a newer angle, the pathologic findings in chronic pyelonephritis. These observers were able to show that the picture of pyelonephritis was not unlike that of a partial occlusion of the renal arterioles—namely, (a) an interstitial inflammation with the usual small cell infiltration, (b) dilatation of the tubules, filled with a collagenous-like substance, (c) periglomerular fibrosis, and (d) a productive endarteritis with a partial occlusion of the lumen.

A complete urologic study was made of 85 diabetic women. These patients, most of

whom had no urologic complaints, were taken consecutively from the diabetic clinic and from the hospital wards. Their ages ranged between 36 and 79 years. In all cases the diabetes was under complete control.

The plan of the urologic study was as follows: (a) an inspection of the external genitalia with special reference to the presence or absence of cystocele, caruncle, and meatal contracture, (b) a determination of the amount of residual urine, if present, (c) a microscopic study of a catheter specimen of urine for pus, blood, organisms, and a determination of its pH, (d) The urethra was studied for stricture and, if found, was graded according to the dilatation necessary to permit the passage of a No. 24 F instrument, which we took as the normal urethral diameter, (e) Cystoscopic examination was then made and the bladder capacity determined (300 to 500 cc. was considered normal), inspection of the interior of the bladder was carried out to determine the presence or absence of stones, tumors, ulcers, diverticuli, etc., inflammation was graded from the simpler forms of trigonitis to the severer types of cystitis, and the appearance and position of the ureteral orifices were noted, (f) Catheterization of the ureters was then carried out with the usual No. 6 lead catheters, points of obstruction were noted, and the gross character, with the rate of flow of the ureteral urine, was observed, the specimens obtained from each kidney were studied microscopically and culturally (when this was not immediately possible specimens were placed in the refrigerator until the examination was carried out), thirty-minute phenolsulfonphthalein tests were made in all cases, and, when occurring, any transvesical leakage of the dye was carefully measured,

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arterial tension (Crabtree<sup>16</sup>) This difference in the liability to hypertension of nephritis and pyelonephritis is a remarkable one It has been mentioned that a descending process in the kidney which affects the afferent glomerular arteriole first, as would be the case in nephritis, may be more effective in the liberation of pressor material than an ascending process (pyelonephritis) that would involve the glomeruli last of all the segments of the glomerulotubular units

*Incidence of Urologic Lesions in Hypertension*—In 71 cases of "essential hypertension," Schroeder and Steele<sup>17</sup> found some abnormality of the kidneys or ureters in 50 The observation on 600 hypertensive patients by Maher and Wosika<sup>18</sup> revealed only 16.8 per cent, or 101 patients, with urologic lesions McCann<sup>19</sup> reports that the search for "unsuspected obstruction and asymptomatic pyelonephritis" in cases of "essential" hypertension is frequently successful On the other hand, hypertension is not always present when urologic disturbances exist Dr Joseph Hyams<sup>20</sup> is carrying out such a survey at the New York Post-Graduate Hospital, and he believes that only 20 to 25 per cent of urologic impairments are accompanied by an elevation of blood pressure, a proportion that is about that of the occurrence of hypertension in the middle-aged and old population as a whole These figures coincide with the observations of Barney and Suby<sup>21</sup> who cite a series of 305 cases of pyelonephritis and hydronephrosis of which 25 per cent had hypertension It would seem that the greatest caution is necessary to determine what is a causal and what is an accidental finding in the urinary tract of persons suffering from hypertension

*Treatment of Urologic Lesions for the Control of Hypertension*—Prostatic hypertrophy, with urethral obstruction and consequent retention of urinary excretory products in the blood, will be accompanied by an elevation of blood pressure This has been known for twenty-five years, and for the same period it has also been appreciated that the relief of such obstruction by retention catheter or by prostatectomy will often serve to lower the blood pressure The significance of this therapeutic result is twofold First, relief of obstruction in the urinary tract may return a blood pressure to normal, and, second, hypertension is a reversible process when the causal agent is removed

A considerable number of hypertensive cases relieved by unilateral nephrectomy have

been reported Many physicians interested in this procedure and its result are of the opinion that the successes have been given publicity but that the failures have been kept under cover Among the few statistics on this point are those of R S Palmer (quoted by Smithwick<sup>22</sup>) who found that in 9 hypertensive cases in which the impaired kidney was removed the blood pressure was favorably affected in only 1, and those of Schroeder and Fish,<sup>23</sup> who obtained permanent lowering of the blood pressure in 2 out of 7 unilateral nephrectomies The point of view has been frequently expressed that this treatment should be carried out only in young persons in whom the hypertension had been of recent origin and when the function of the intact kidney was unequivocally normal Even when these criteria are adhered to, the effect on the hypertension appears to be unpredictable As mentioned previously, if an assay of pressor and inhibitor substances could be made in the urine, it might be determined whether one or the other kidney could be advantageously removed This, however, is a matter for future experimentation, but there is a possibility that it can be made serviceable

A definite indication that has emerged from the studies of hypertensive disease and the urinary tract is that all cases of pyelitis and prostatism not only call for treatment when they actually exist but also for preventive measures It might be advisable to have every man over 50 undergo a yearly examination of his prostate and to have every woman who has borne children have a yearly check-up with regard to the condition of her urinary tract Preventive measures may be worth a great deal more than actual treatment when hypertension has become established There is one big objection to this program and that is that the urologic surveys are expensive and there is a lack of adjustment of the patient's purse to the cost of these procedures in most hospitals

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From the Urological Service and the Medical Service of the Buffalo General Hospital, and the School of Medicine of the University of Buffalo.

finally, plain x-rays, pyelograms, and pyeloureterograms were made both in the prone and in the upright position. Only 1 case of the series had intravenous pyelography carried out.

The detailed report of this study is being published [Ann Int Med] in its entirety by two of us (B D B and N K.). The following is a summary of a part of this work, with emphasis laid more particularly on the therapeutic measures employed. The total number of cases comprising this study was 85, and for the convenience of consideration the following grouping has been made.

I Bilateral pyelitis or pyelonephritis, hydronephrosis, and bilateral impairment of function, i.e., diminished phenolsulfonphthalein output (39 cases)

II Unilateral pyelitis or pyelonephritis, hydronephrosis, ptosis, stone, and unilateral impairment of function, i.e., diminished phenolsulfonphthalein output (15 cases)

III Lower urinary tract involvement alone (24 cases)

IV Normal urinary tract (7 cases). Only 1 of these or 14 per cent showed hypertension.

In a further effort of analytic study, group I was subdivided into

A Individuals with unequivocal bilateral reduction of kidney function (based on a one-half hour phenolsulfonphthalein test with a standard of 20 per cent of dye recovery from each kidney taken as normal). In this division there were 10 cases. Seven of these had an infection in one or both kidneys, also it was found that 7 cases showed a hydronephrosis, hydroureter, and a blunting of the calices, either unilateral or bilateral. In this division of 10 cases, 6 showed a definite hypertension.

B Individuals showing a unilateral reduction of renal function. Here were placed 15 cases, and all of these were found to have an active infection on one or both sides, of these, 13 cases showed a hydronephrosis, hydroureter, or blunting of the calices on one or both sides, while a stone in the kidney was encountered in 1 instance. In this division of 15 cases, 12 showed a definite hypertension.

C Individuals showing a normal renal function, but with other bilateral lesions. Here were placed 14 cases in which infection was demonstrated on one or both sides in 10 instances, while hydronephrosis, hydroureter, blunting of the calices occurred in 12 cases. Stone in the ureter was found in 1 instance. In this group with normal function, hypertension was found in 8 cases.

Of the group of patients showing bilateral involvement (39 cases) 2 cases showed a unilateral kidney infection in which no bladder infection could be demonstrated, and 3 cases showed a bladder infection in which no kidney infection was found. The group showed a consistent hypertension in 26 cases or 70 per cent of their number.

II In the group that had unilateral involvement (when one kidney and ureter was found to be absolutely normal) there were 15 cases analyzed as follows.

A Unilateral reduction of function only. This subdivision comprised 3 cases, hypertension was found in 2.

B Hydronephrosis, blunting of the calices, or hydroureter occurred in 11 cases, hypertension was found in 7.

This group harbored a kidney infection in 7 instances, and in 1 case a small calculus was demonstrated. In addition 5 had so-called minimal lesions (i.e., slight blunting of the calices with no infection). Hypertension was found in 60 per cent of this group.

III Cases showing lower urinary tract involvement alone.

A Infection in the bladder urine was observed in 13 cases, and in 5 additional instances there was cystoscopic evidence of an inflammatory process in the bladder without bacteria being found. The degree of bladder involvement was interpreted as (1) Grade 1 cystitis (trigonitis only—13 cases), (2) Grade 2 cystitis (trigonitis and moderate cystitis—2 cases), and (3) Grade 3 cystitis (trigonitis and severe cystitis—3 cases).

Inflammation in the bladder alone was thus found in 18 instances in this group, while a bladder involvement associated with an upper urinary tract infection was noted in 42 additional cases gleaned from the preceding divisions, thus showing an infection in 60 of the 85 cases comprising the entire series. There was no patient who had an unequivocal upper urinary tract infection without the lower tract being similarly involved. However, 2 patients did have a positive culture from one kidney of a pathogenic organism without any involvement of the bladder.

B Stricture of the urethra was encountered in 15 instances in the lower urinary tract group and were divided as follows: (1) Grade 1 stricture (1 case), (2) Grade 2 stricture (3 cases), and (3) Grade 3 stricture (11 cases).

Stricture of the urethra in the upper urinary tract group was demonstrated in 16 cases and divided as follows: (1) Grade 1 stricture (3

cases), (2) Grade 2 stricture (5 cases), and (3) Grade 3 stricture (8 cases)

The total number of strictures found in the entire series of 85 cases was 31. These two groups are not entirely comparable, since many of those classed in the lower urinary tract group were placed there simply because they had urethral strictures and no other urinary tract pathology.

Of the 24 cases showing lower urinary tract involvement, stricture of the urethra, cystocele, and residual urine in combination occurred in 4 instances, while stricture of the urethra and cystocele without any demonstrable residual urine was present in 14 cases. The total number of patients with residual urine in this group was 8.

In this group (24 cases) 12 or 50 per cent consistently showed hypertension.

### Control Study

Since diabetic women showed evidences of active infection in such a high percentage of instances, it seemed imperative that we obtain some idea of the incidence of infection in nondiabetic women. However, it did not seem justifiable to subject a series of normal women to a complete urologic examination, so in an effort to get some sort of control data the bladders of 23 nondiabetic women who were undergoing treatment in the obesity clinic were catheterized. The urine was examined for pus and bacteria immediately and then cultured. None of these had any gross infection. However, 12 had a "rare" or a "few" pus cells, 10 only, and a few bacteria in the smear, while 6 had a completely sterile urine. In this control group 3 showed a growth of *Bacillus coli*, while the predominating organisms were anaerobic gram-negative gas-producing bacilli and anaerobic streptococci.

A further consideration in this study included an effort to determine the type of infection present and resulted in the following findings:

In the bilateral involvement group (upper urinary tract) of 39 cases the organisms identified were

A. *B. coli* (*Escherichia*), 13 cases, *B. aerogenes*, 2 cases, *B. alcalescens*, 1 case, Morgan's bacillus, 1 case, *B. pyocyaneus*, 1 case, and *B. proteus*, 1 case.

B. Enterococci and anaerobic streptococci, 9 cases, and staphylococci, 2 cases.

C. Combination of groups (A) and (B) mixed infection, 9 cases.

D. Anaerobic gas-producing gram-negative bacilli, 1 case.

E. Hemolytic streptococci, 2 cases.

F. Sterile cultures, 5 cases.

In this group, 22 of the 39 cases were found to be positive for members of the *B. coli* group.

In the lower urinary tract involvement group the following organisms were identified:

A. Gram-negative bacilli (*B. coli*), 2 cases.

B. Enterococci, anaerobic streptococci, and staphylococci, 5 cases.

C. Combinations of groups (A) and (B), no cases.

D. Anaerobic gas-producing gram-negative bacilli, 12 cases.

E. Hemolytic streptococci, 3 cases.

F. Sterile cultures, 2 cases.

In this group of 24 cases only 2 were found positive for members of the *B. coli* group.

In our control series of nondiabetic cases the following organisms were identified in the urine cultures:

A. Gram-negative bacilli (*B. coli*), 1 case.

B. Enterococci and anaerobic streptococci, 6 cases.

C. Combination of groups (A) and (B), 2 cases.

D. Anaerobic gas-producing gram-negative bacilli, 5 cases.

E. Hemolytic streptococci, no cases.

F. Combination of groups (B) and (D), 3 cases.

G. Sterile cultures, 6 cases.

Of the 23 control cases only 3 were positive for members of the *B. coli* group.

### Therapy

Since a great deal of importance has been stressed in the past on this eradication of infection in persons with diabetes, it is obvious from the above study that not enough attention has been paid to the urinary tract. It would seem therefore, that some form of routine procedure should be instituted for the study of the urinary tracts of diabetic patients, particularly women.

When it is assumed that the diabetes is controlled, a careful study as outlined above is justified, especially in those showing infection or hypertension or both. It has been shown in this study that there is a high incidence of lower urinary tract disease. Stricture was found in 31 instances, this, of course, can be handled by dilatation of the urethra. Our plan is to dilate the urethras of these patients up to 30 or 32 F at frequent intervals (i.e., from three to six weeks), gradually increasing the interval.

This procedure often helps in the reduction

of the residual urine as well as the clearing up of the infection

If cystoceles are found to be the factor in the production of residual urine, it is deemed advisable to repair them surgically or at least, if this is inadvisable, to use a well-fitting pessary

For the cystitis, suitable mild irrigations, instillations, and proper oral antiseptics, depending on the type of bacteria, have been used. Sulfanilamide and neoprontosil, which have been exceedingly well tolerated, and mandelic acid are the chief therapeutic agents we have used in this series

In the upper urinary tract it is wise to make every effort to prevent permanent kidney damage and loss of function. In cases of simple stricture of the ureter with moderate hydronephrosis, periodic dilatations of the ureter have been carried out. Where infection of the kidney was demonstrated, suitable oral remedies when the kidney function is good have been used

In unilateral disease, if there is a marked hypertension in the presence of infection with appreciable loss of function and if there does not appear to be improvement under conservative treatment, we believe a nephrectomy should be considered, providing the other kidney has normal function

Up to the present date this study has not progressed far enough to permit us to draw far-reaching conclusions on the ultimate effect of this routine. We have observed, however, that in many of these patients the progress of the urinary disease has been halted. The infection has been cleared up, the residual urine has been reduced, and in many instances the kidney function has been bettered, with a marked improvement in the general appearance of the patient. In some instances there has been observed a change in the pyelograms, so that mild and moderately severe hydronephrosis and hydroureters have returned almost to normal

## Conclusion

1. The presence of sugar in the urine as found in persons suffering from diabetes is

probably a factor in increasing the incidence of infection in these patients

2. Although no comparable control study could be made of the urinary tract, it is possible that a much higher incidence of pathologic change is found in the urinary tract of diabetic patients than in nondiabetic patients

3. A high incidence of hypertension was observed in diabetic patients

4. The patients who had an involvement of the upper urinary tract, especially the "bilateral group," showed a somewhat higher incidence of hypertension when there was a reduction of kidney function, infection, and evidence of renal destruction

5. The lower urinary tract was found to be involved in a large number of cases, both in conjunction with upper urinary tract lesions and alone

6. The presence of stricture, cystocele, infection, and residual urine in the presence of sugar seems to act, and probably does act, as a predisposing factor to upper urinary tract involvement, since stasis is frequently a factor in the production of upper urinary tract disease

7. A brief outline of therapy has been presented

An expression of appreciation is due Dr. Frederick J. Parmenter, chief of the Urological Service, Dr. Edward C. Koenig, chief of the Roentgenological Department, and Dr. Ernest Witebsky, of the Bacteriological Department, for their splendid cooperation and assistance

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## GENTLE HINT

*Found by R. Mac B. on the letterhead of a colleague*

I stick to those who stick to me,  
All others need not bother me,  
Although of patients I've no lack,  
It takes the coin to run this shack,  
If I'm to be your doctor still,  
You must keep paid up on your bills  
—J. A. M. A.

## MAKING IT HOT FOR THEM

*Found by E. M. B. in the New Haven Register*

Miss Mae McCorkle, maternity supervisor of the Visiting Nurse Association and director of Mothers' Classes of that organization, will conduct a demonstration of baking and dressing a baby at tonight's session of the New Haven Fathers' Council at 155 Greene Street

—J. A. M. A.

# TUBERCULOSIS IN YOUNG WOMEN

ROBERT E. PLUNKETT, M D , and JULIUS KATZ, M D , Albany, New York

THE marked decrease in mortality from tuberculosis in the population as a whole and the fall of this disease from first to seventh place as a cause of death within the past thirty years have received so much attention that the importance of the disease in certain age groups has not been accorded the recognition it deserves. This is shown in part by the fact that for several years in some areas case-finding studies have been conducted more intensively among young school children, in whom the tuberculosis death rate is lowest, than among older individuals.

In upstate New York tuberculosis is still the leading cause of death among women at ages 20 to 34 and is among the first three causes of death in women between 10 and 40 and in men between 20 and 50. The relative importance of the disease in the various age groups differs in the two sexes (Table 1).

The difference in shape of the curve of mortality by age among men and women is well known (Fig 1). The rates in both sexes fall from a relatively high point in infancy and early childhood to a very low level in the 5-to-14-year age group. From this point, the rates diverge. Among women there is a sharper increase than among men up to 25 to 34 years, where the rate for women falls slightly below that for men. This was the high point of mortality for women in upstate New York in the five-year period 1920 to 1924 and was the highest point in 1934 to 1938, with the exception of the comparatively small group 75 years of age and over. The rate for men in 1934 to 1938, however, continued to rise to a maximum at 45 to 54 years of age, where it was almost three times as

high as in women. From this point the rate declined among men but remained much higher than the female rate through the rest of the life span.

Not only do the mortality rates differ between men and women in the various age groups but the decreases in mortality in specific age groups over a period of years vary with age and sex (Fig 2). Thus, since 1915 in upstate New York the rate of decline has been greater among men than among women in all age groups except those over 45 years. In the groups under 45 the greatest difference between men and women appeared at 15 to 24 years, where the rate has decreased by 86 per cent in men and 79 per cent in women. It is interesting that among women in this age group there has been a considerably sharper decline in rate since 1924 than for the ten years previously, similar to the condition found by Hart and Wright<sup>1</sup> in England and Wolff<sup>2</sup> in the United States registration area.

Although the mortality rate in 1915 among women between 15 and 24 was considerably higher than that in the group aged 45 years and over, the relatively more rapid decrease in mortality in the younger women has caused the rates to approximate each other, so that since 1936 the rate for the older women has actually been somewhat higher than for the younger group. This suggests the need for increasing study not only of the 15-to-24-year group but also of women in the older ages.

In spite of the differences in the rates of decrease at the various ages, however, one of the most outstanding features of the curve of mortality by age and sex is its similarity from year to year (Fig 1) and the close resemblance of the curve for this State to that for the United States and even to that of England.<sup>1</sup>

Numerous explanations have been offered

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 9, 1940.  
From the New York State Department of Health.

TABLE 1—POSITION OF TUBERCULOSIS AMONG THE THREE MOST IMPORTANT CAUSES OF DEATH (NEW YORK STATE EXCLUSIVE OF NEW YORK CITY, 1938)

Age	Male			Female		
	Leading cause	Second cause	Third cause	Leading cause	Second cause	Third cause
1-4						
5-9						
10-14						
15-19						Tuberculosis
20-24		Tuberculosis		Tuberculosis	Tuberculosis	
25-29		Tuberculosis		Tuberculosis		
30-34		Tuberculosis		Tuberculosis		
35-39						
40-44			Tuberculosis			Tuberculosis
45-49		Tuberculosis				
50+		Tuberculosis				

RECORDED DEATH RATES PER 100,000 POPULATION  
FROM TUBERCULOSIS ALL FORMS BY AGE AND SEX  
NEW YORK STATE EXCLUSIVE OF NEW YORK CITY  
5 YEAR AVERAGES 1920-1924 AND 1934-1938

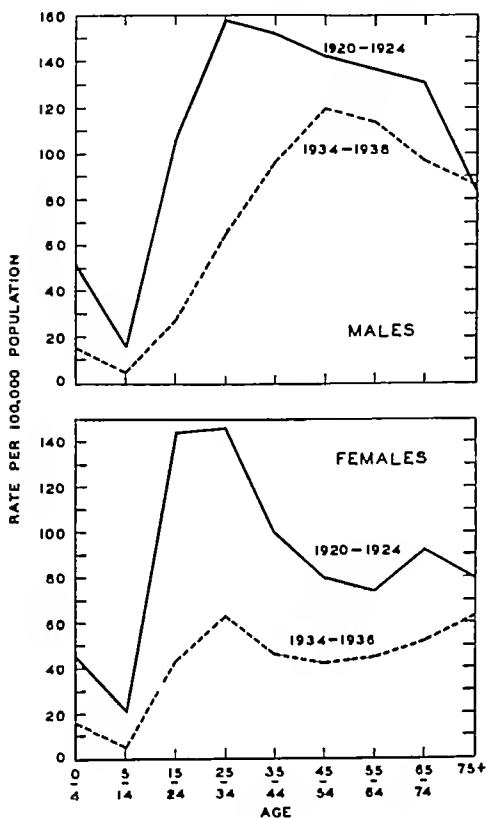


FIG 1

for the higher death rate and for the slower decline in young women than in young men

1 One of the earliest theories proposed was the increasing industrialization of women, with its physical and nervous strain and increasing opportunity for exposure to infection. While some authorities<sup>3,4</sup> find no evidence for this theory, nevertheless, Hart and Wright<sup>1</sup> find a definite statistical correlation between the proportion of young girls, aged 14 to 20, entering gainful occupations and the tuberculosis mortality rate of girls aged 15 to 25 of the same generation

2 The effects of changes in the standard of living, particularly as indicated by changes in housing conditions, are stressed by Hart and Wright<sup>1</sup>. These authors found that a slowing up in the improvement of housing facilities resulted in a decrease in the rate of decline of mortality from tuberculosis, especially in young women, while acceleration in the build-

ing of new houses, with alleviation of overcrowding, increased the rate of decline

It cannot be doubted that these factors, and probably many others, influence the mortality rate in young women. Nevertheless, the fact that the mortality curve shows such definite characteristics (Fig 2) and that the rate among young women was higher than that for young men as far back as 1860, before such factors as the entrance of women into industry reached important dimensions, indicates that such environmental forces are only contributory to differences resulting from basic biologic phenomena

3 Wolff<sup>2</sup> finds a definite association between tuberculosis and the generative activity of women. He cites as an example the fact that the great increase in the birth rate in most countries following the World War was accompanied by a failure of the tuberculosis mortality rate to decline as rapidly in young women, particularly between the ages of 15 and 25, as in young men of the same age. In almost all other age groups, on the other hand, the decrease in the death rate was greater in women, and the rate itself was lower than for men

4 Rich,<sup>5</sup> in discussing the subject of age-determined factors in tuberculosis, stresses the important role played by the physiologic phenomena of pubescence by pointing out first, that in spite of the evidence of increased tuberculous infection in the age period between 5 years and puberty there is actually a decrease in the mortality, whereas at puberty and during adolescence the increase in disease is far greater than that of infection, second, that Opie and McPhedran have shown that even in familial exposure to open cases of tuberculosis twice as many cases of clinical tuberculosis developed in the 10-to-14-year age group as in the 1-to-9-year group, third, that the mortality rise occurs at an earlier age in women than in men, probably because of the earlier occurrence of puberty changes in the former

Since the age incidence of active tuberculosis is similar to the incidence of mortality,<sup>6</sup> tuberculosis-control efforts, to be most productive of results, must be directed against the groups with the higher mortality rates. The high rates among young women and the failure of the rates to decline as rapidly as in men of the same age indicate that this group might be studied profitably. Additional evidence of the importance of examining this group is afforded by the fact that, in the three-year period 1936 to 1938, 26 per cent of all cases of

RECORDED DEATH RATES PER 100 000 POPULATION FROM TUBERCULOSIS ALL FORMS,  
BY AGE AND SEX

NEW YORK STATE EXCLUSIVE OF NEW YORK CITY, 1915-1938

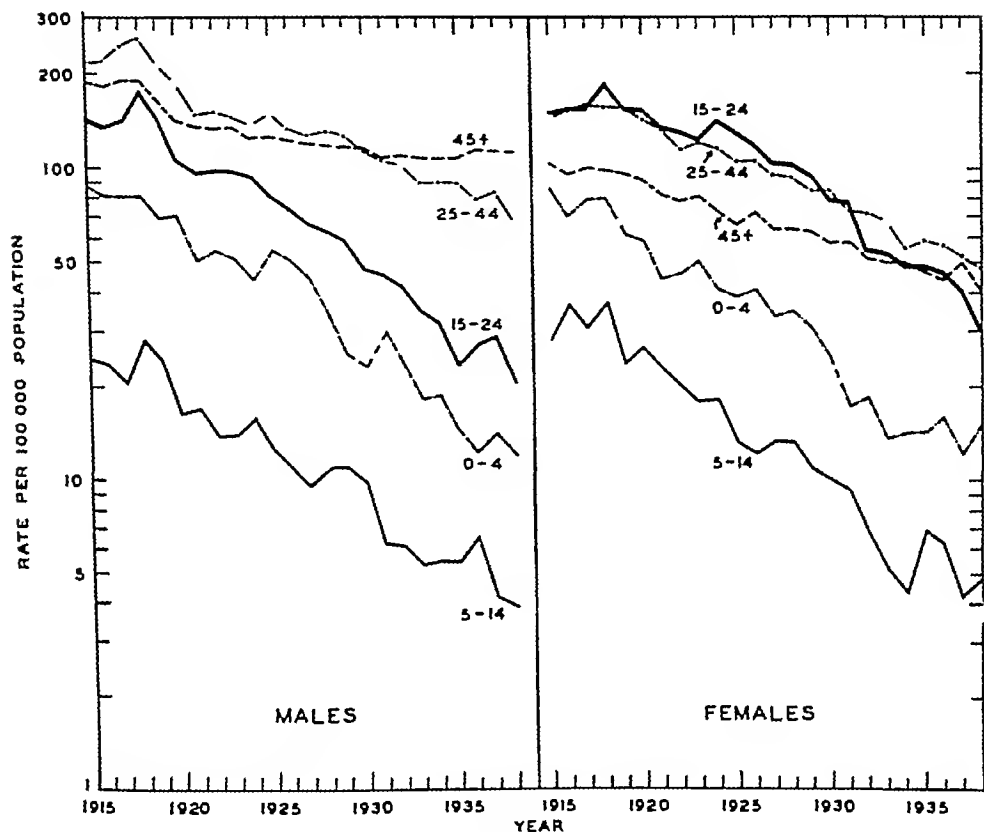


FIG 2

tuberculosis reported among women in up-state New York were between 15 and 25 years of age, and 53 per cent were between 15 and 34

For many years the New York State Department of Health has recognized the importance of two main groups in its case-finding program first, contacts of open cases of tuberculosis and those referred to the clinic by the family physician because of suspicious symptoms or signs, second, special groups of the population in whom tuberculosis may be an important health hazard

The case-finding value of the first part of the program, the examination of contacts and suspects, has been emphasized<sup>2</sup> and need not be discussed here, except to mention the results of the examination of young women. In 1937 the yield in new cases of tuberculosis in women aged 15 to 24 examined in the State tuberculosis hospital clinics was 3.1 per cent

compared with 2 per cent in men of the same age. This was the only age group in which the case yield was higher in women than in men.

As part of the second phase of the program, that is, the study of special population groups, the following groups of women have been studied: normal school students, a group of girls in one of the State schools for delinquents, and a group of women in a food-packing industry.

In cooperation with the State Department of Education, a study of tuberculosis among the students of ten of the normal schools in the State has been conducted since 1933, in order to determine the importance of the disease as a menace to the health of these students. The examination of this group is of additional importance in that the diagnosis of tuberculosis and institution of treatment in the early, non-infectious stage will serve to prevent the in-

PERCENTAGE OF POSITIVE TUBERCULIN REACTIONS AT FIRST EXAMINATION, BY SEX  
NORMAL SCHOOLS 1933-1939

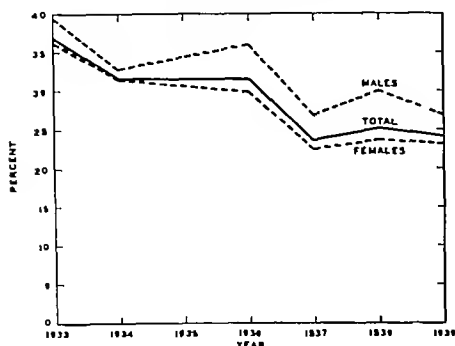


FIG 3

fection of the young pupils whom these individuals might be called upon to teach. Furthermore, the personal participation of future teachers in a study of this kind is of considerable educational value because it arouses their interest in the disease and in the methods used in its control.

The students are between 17 and 21 years of age, white, and from the lower middle-class social and economic group. About three-fourths of the total are girls. The procedure consists of tuberculin-testing all freshmen with 0.1 mg of O.T. and x-raying the positive reactors. The negative reactors are retested in the second and third years, while all positive reactors are x-rayed annually but are not retested. Inasmuch as it was impractical to perform several tests with increasing doses of tuberculin during the annual visits to each school, it was decided to use this dose in spite of the knowledge that a certain proportion of those negative to this dose would react positively to a larger dose. Moreover, the number of cases of clinically significant pulmonary tuberculosis which might have been missed by this screening is probably negligible. The course of study in the normal schools is of three years' duration in eight of the ten schools and of four years' duration in two, but, since a number of students leave school annually before completing their courses, many dropped from observation before receiving all three tests or x-rays.

A total of 7,536 students were examined, of whom 3,203 were examined only once, 1,962, only twice, 2,260, three times, and 111 students taking the four-year courses, four times.

At the time of the first examination the prevalence of infection in the entire group was 28 per cent, with 31 per cent positive reactors

among the boys, and 27 per cent among the girls. These figures are somewhat higher than those given by Stiehm<sup>8</sup> but are in general accord with his finding that the rate among students from the eastern states is higher than that among students from the rest of the country. Among the girls who were tuberculin negative at the time of first examination, 43 per cent were positive at the second, and 26 per cent of those negative at the first two tests were positive at the third. The average yearly increase in the infection rate was 3.7 per cent compared with Stiehm's figure of 2.4 per cent.

The prevalence of infection among students at the time of admission to school dropped from 37 per cent in 1933 to 24 per cent in 1939, a decrease of 35 per cent. The decrease was somewhat greater among the girls, 36 per cent, than among the boys, 32 per cent (Fig. 3).

In view of the recent findings in Tennessee<sup>9</sup> and elsewhere of a high percentage of individuals showing calcium deposits on x-ray examination but having negative tuberculin reactions, a study was made in 1939 to determine whether a similar condition existed in New York State. In that year 1,564 freshmen were x-rayed regardless of the results of the tuberculin test, and all x-ray films were interpreted without any knowledge of the tuberculin reaction. Six per cent of the positive reactors showed x-ray evidence of calcium deposits, while only 1.6 per cent of the negative reactors showed such findings. These results confirm our former opinion that the prevalence of calcium deposits among negative reactors is low in this State. No cases of clinical pulmonary tuberculosis were found among the negative reactors.

In the total of 7,536 students examined, 29 cases of clinically significant pulmonary tuberculosis were found, a rate of 0.38 per cent, which is lower than the figure of 0.6 per cent mentioned by the Tuberculosis Committee of the Student Health Association.<sup>10</sup> The rate was practically the same for the boys as for the girls. Contrary to the findings of Stiehm, most of the cases were discovered at the first examination, only 4 cases developing subsequent to the first examination. Of the 29 cases, 25 (86 per cent) were minimal and 4 (14 per cent) were moderately advanced. One of the cases developing subsequent to the first examination was moderately advanced at the time of the second examination one year later.

Since the wide variation in the incidence of tuberculosis in various schools<sup>11</sup> is due, in part at least, to differences in case-finding techniques

and possibly to differences in standards of x-ray diagnosis, it is important to define our criteria for the x-ray diagnosis of pulmonary tuberculosis. In this classification are included only those cases with definite parenchymal involvement of the reinfection type suggesting activity or possible activity of the lesion. Calcified areas either in the parenchyma or hilum, fibrous strands, and apical or basal pleuritis are not considered of clinical significance.

The progress of the cases of tuberculosis diagnosed has not been followed, the students being referred to their private physicians and the local tuberculosis hospitals for further study and treatment. All of the cases have left school for sanatorium care.

The second special section of the population chosen for study was a group of 799 inmates of a New York State school for delinquent girls. These girls were between 13 and 17 years of age and were committed to the school by the children's courts of several of the larger cities of the State, chiefly New York City. About one-third of the girls were colored, and most of them came from families of a low economic status. This group was chosen for study because of their age, their poor home environment, and low family financial level. The procedure consisted of a single x-ray film of the chest.

Among the 799 individuals x-rayed, 6 cases of clinically significant pulmonary tuberculosis were discovered, a rate of 0.75 per cent. Four of the cases were minimal, 1 was moderately advanced, and 1 was far advanced. Two of the cases were found among the Negro girls, making the case rate among Negroes about the same as among the whites.

The third special study was made among 636 female employees in a food-packing industry. This group was selected because it included food handlers and because the age group seemed to be one in which a high yield of cases of tuberculosis might be expected.

The average age of these women was 34. Less than 2 per cent of the group were Negroes. A single x-ray film of the chest was made. Only 1 case of tuberculosis was found.

A precise explanation of the differences in the prevalence of tuberculosis in these three groups is difficult, but undoubtedly differences in standards of living and other social and economic factors play an important role.

It may be of interest to mention briefly a group of women regarding whom much discussion has appeared in the literature within the past few years—namely, student nurses.

The subject of the occupational hazard from tuberculosis in this group is a controversial one, and opinions vary from that of Hembeck,<sup>12</sup> who finds an extremely high incidence of tuberculosis, to that of Brahdy,<sup>13</sup> who claims that the incidence of disease is no greater among nurses than in any other group of women of the same age. All writers on the subject agree, however, that the danger of infection is much greater among nurses than in other groups and that students who begin their courses of training with negative tuberculin reactions almost invariably acquire a primary infection during their period of training.

### Summary and Discussion

There is abundant statistical evidence that tuberculosis among young women is of major importance. We possess insufficient information to define the influence that constitutional or environmental factors have upon this problem. Three groups of young women, totaling over 7,000 individuals, were examined for tuberculosis, with a yield of but 0.4 per cent for the entire group. This rate seems low, especially in comparison to that found among contacts and suspects. However, this should not suggest the discontinuance of these studies. On the contrary, the study of tuberculosis among women in industry, during pregnancy, after labor, and in many other groups should be continued. Aside from their value as case-finding procedures, the data obtained from such studies will permit more accurate estimates of the danger of tuberculosis in various population groups and will facilitate the institution of control measures.

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PERCENTAGE OF POSITIVE TUBERCULIN REACTIONS AT FIRST EXAMINATION BY SEX  
NORMAL SCHOOLS, 1933-1939

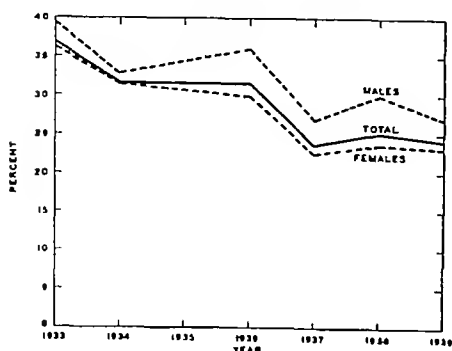


FIG 3

fection of the young pupils whom these individuals might be called upon to teach. Furthermore, the personal participation of future teachers in a study of this kind is of considerable educational value because it arouses their interest in the disease and in the methods used in its control.

The students are between 17 and 21 years of age, white, and from the lower middle-class social and economic group. About three-fourths of the total are girls. The procedure consists of tuberculin-testing all freshmen with 0.1 mg of OT and x-raying the positive reactors. The negative reactors are retested in the second and third years, while all positive reactors are x-rayed annually but are not retested. Inasmuch as it was impractical to perform several tests with increasing doses of tuberculin during the annual visits to each school, it was decided to use this dose in spite of the knowledge that a certain proportion of those negative to this dose would react positively to a larger dose. Moreover, the number of cases of clinically significant pulmonary tuberculosis which might have been missed by this screening is probably negligible. The course of study in the normal schools is of three years' duration in eight of the ten schools and of four years' duration in two, but, since a number of students leave school annually before completing their courses, many dropped from observation before receiving all three tests or x-rays.

A total of 7,536 students were examined, of whom 3,203 were examined only once, 1,962, only twice, 2,260, three times, and 111 students taking the four-year courses, four times.

At the time of the first examination the prevalence of infection in the entire group was 28 per cent, with 31 per cent positive reactors

among the boys, and 27 per cent among the girls. These figures are somewhat higher than those given by Stiehm<sup>8</sup> but are in general accord with his finding that the rate among students from the eastern states is higher than that among students from the rest of the country. Among the girls who were tuberculin negative at the time of first examination, 43 per cent were positive at the second, and 26 per cent of those negative at the first two tests were positive at the third. The average yearly increase in the infection rate was 3.7 per cent compared with Stiehm's figure of 2.4 per cent.

The prevalence of infection among students at the time of admission to school dropped from 37 per cent in 1933 to 24 per cent in 1939, a decrease of 35 per cent. The decrease was somewhat greater among the girls, 36 per cent, than among the boys, 32 per cent (Fig 3).

In view of the recent findings in Tennessee<sup>9</sup> and elsewhere of a high percentage of individuals showing calcium deposits on x-ray examination but having negative tuberculin reactions, a study was made in 1939 to determine whether a similar condition existed in New York State. In that year 1,564 freshmen were x-rayed regardless of the results of the tuberculin test, and all x-ray films were interpreted without any knowledge of the tuberculin reaction. Six per cent of the positive reactors showed x-ray evidence of calcium deposits, while only 1.6 per cent of the negative reactors showed such findings. These results confirm our former opinion that the prevalence of calcium deposits among negative reactors is low in this State. No cases of clinical pulmonary tuberculosis were found among the negative reactors.

In the total of 7,536 students examined, 29 cases of clinically significant pulmonary tuberculosis were found, a rate of 0.38 per cent, which is lower than the figure of 0.6 per cent mentioned by the Tuberculosis Committee of the Student Health Association.<sup>10</sup> The rate was practically the same for the boys as for the girls. Contrary to the findings of Stiehm, most of the cases were discovered at the first examination, only 4 cases developing subsequent to the first examination. Of the 29 cases, 25 (86 per cent) were minimal and 4 (14 per cent) were moderately advanced. One of the cases developing subsequent to the first examination was moderately advanced at the time of the second examination one year later.

Since the wide variation in the incidence of tuberculosis in various schools<sup>11</sup> is due, in part at least, to differences in case-finding technics

others in which the work has been intensive for years and in which there have been material changes in living conditions I cannot help feeling that the most important factor is this "biologic influence," whatever it is. Has it been a general decline in virulence of the tubercle bacillus, a general accumulation of some degree of immunity, or a combination of the two? Perhaps some of the tuberculosis experts would be willing to venture an opinion.

Dr B. E. Roberts, *Poughkeepsie, New York*—I feel it is a source of great encouragement that in this study, and other recent studies, the principles of epidemiology are being considered to a much greater extent than in the past. The

time factor, which I believe is the "fourth dimension" of Professor Einstein, makes the study of tuberculosis both difficult and interesting. I wonder whether the failure of the upper age group to experience a sharp drop in tuberculosis mortality in recent years is not merely one aspect of the time factor, in that deaths at these ages may occur largely in persons whose onsets were many years previously, at a time when the general frequency of infection was higher.

The reference made to the fact that active tuberculosis was seldom found on re-examination appears to be highly important from the standpoint of deciding upon the most effective use of public funds and to merit comment upon the implications involved.

### DIA BETA EATA FRATERNITY

(In the treatment for diabetes some physicians with home offices serve breakfast to patients after the administration of insulin)

Most human lives are fraught with ills,  
Some cured by knives and some with pills,  
But few entirely escape,  
And go through life in first-class shape  
Now, of the several diseases  
That in their deadly clutches seize us,  
And for which physicians treat us,  
Is the insidious diabetes  
One don't suspect that he has got it  
Until by accident they spot it  
When one's examined for some other—  
Perhaps imaginary—bother  
Then, if in luck, perhaps you'll pass  
Into the doctor's morning class  
At nine you seek the doctor's door,  
As many others have before,  
And to the nurse, a charming miss,  
You hand your specimens of—thus  
Detail needs no explanation,  
Though 'tis a source of information  
Then, in the waiting room you'll find  
A group of others of your kind  
Graciously they all unbend,  
And greet you as an oldtime friend,  
For there's a sort of brotherhood  
Twixt those with sugar in their blood,  
For whether of high or low condition  
It seems to sweeten the disposition  
And so they're friendly with each other,  
Greeting a newcomer as a brother  
And here they sit and hold confab  
While waiting for the needle's jab,

This enters well beneath the skin  
And pumps one full of insulin

Ah, insulin! Good insulin!  
But for you what might have been?  
I might be lying stark and cold,  
Pushing daisies up through the mold  
Instead of which you and my diet  
Rouse emotions once almost quiet,  
And fill me with so much of pep  
That if I do not watch my step  
The chances are that I shall fail  
To keep outside the county jail

But I digress, my tale's not done,  
For, after jabbing everyone  
We're sent into the breakfast room,  
A place that never harbors gloom,  
Where Mrs. Doctor, gracious hostess,  
Loves to cerealize and toast us  
And there we sit in friendly chatter,  
As if there's not a thing the matter,  
While in and out the doctor slips  
With good advice and merry quips  
I know of nothing that's more pleasant  
Than class meets with the doctor present

But, though the meetings of the class  
In a fraternal spirit pass,  
All those who hope to graduate  
Their vigilance must not abate,  
So be advised by him who writes,  
Obey the rules the doctor cites  
From ancient dame to little laddie  
We hail him as our sugar daddy

—J L B in J A M A

### SELECTION OF BLOOD BANK DONORS

Only those persons who have been born in this country and who have never lived in districts where malaria is prevalent should be used as donors for blood banks, Dr Ernest F. Gordon, Yonkers, New York, advises in the *Journal of the American Medical Association* for March 22. He says that such a policy will minimize the possibility of spreading the disease from man to man. The first recorded case of an accidental transmission of malaria through transfused stored blood is reported by him.

### MEDICAL LIBRARY ASSOCIATION

The forty-third annual meeting of the Medical Library Association will be held this year at the University of Michigan Medical School, Ann Arbor, Michigan, on Thursday, Friday, and Saturday, May 29, 30 and 31, under the presidency of Col. Harold W. Jones, of the Army Medical Library, Washington. D. C. Hotel headquarters will be at the Michigan Union. The program will include papers on the Cooperation of Libraries, Union Catalogues, Medical History, and Industrial Medicine.

## Discussion

Dr Herbert R. Edwards, *New York City*—Drs Plunkett and Katz have presented a most timely subject in a most acceptable manner. The present-day trend in case finding among healthy and apparently normal adults rather than children has been of the greatest significance in the tuberculosis control program. That part of the population designated as "young women" represents only a section of the apparently healthy population that should be included in the surveys of the type presented by Drs Plunkett and Katz. It is of interest to note that they have emphasized the importance of women above the 15-to-24-year group. It is generally accepted today that the mass survey as a method of case finding is most productive among those over 15 years of age, those who are unemployed or on home relief, those living in tenement houses and among Negroes.

The greatest value in studies of this type is the fact that the majority of the cases are detected at a time before the disease has progressed to an advanced stage with the characteristic symptoms, for it is in that stage when infection is so easily spread to others. It is, therefore, conceivable that by a broad application of the mass survey principle we can accomplish more in the ultimate control of tuberculosis than by any other method.

The prompt examination of contacts to known cases and isolation of open cases in the sanatorium and hospital are fundamentals of tuberculosis control and need no extended discussion here. It must be remembered, however, that once the disease has developed to an advanced stage the chances for cure are limited. Today our hospitals have only about 10 per cent of their cases registered with minimal lesions, the remainder are beyond that curable stage. Thus, it is not surprising that 20 per cent of the discharges are by death and that less than half of those discharged alive will survive five years without a relapse or death.

The use of the tuberculin test as a preliminary screen in surveys of this type is more easily applied than in those not under some type of institutional supervision. In this experience it represents a saving of approximately 65 per cent of the x-rays that would be needed if all were routinely x-rayed—a matter of the greatest importance in the budget.

Here in New York City the Department of Health x-rayed 15,795 high-school students irrespective of their reaction to the tuberculin test to determine the possible prevalence of tuberculous lesions in negative reactors. Our results definitely confirmed the reliability of the tuberculin test as a screening method. When a single test was done we missed 9 per cent with apparent tuberculous lesions, the majority of which reacted to the second dilution of 1 mg. We can agree with Drs Plunkett and Katz in that no cases of

clinical pulmonary tuberculosis were found among the negative reactors.

It will be noted that the cases discovered by Drs Plunkett and Katz were referred to their private physicians or the local tuberculosis hospital for further study. This, I believe, is an answer to the practitioner who objects to the conduct of such studies because it tends to take his patient away from his supervision. Here again the experience in New York City gives ample evidence that the case-finding survey, in fact, places far more cases under the care of the practitioner than it takes away.

The differences in the yield of significant cases reported in this study compares somewhat with experiences here in New York City. In 15,795 high-school pupils with an average age of 16.2 years, there were 58 or 0.4 per cent. In 16,810 students in city colleges with an average age of 18.8 years, 34 or 0.2 per cent were clinically significant. In 8,708 National Youth Administration enrollees, 79 or 0.9 per cent were classified as significant. The main differences between these groups were that in the colleges approximately 80 per cent were Jews compared to about 30 per cent among the high schools and National Youth Administration. There is less tuberculosis among Jews than Gentiles in New York City. Also the colleges represented a much higher level income group as compared to the other two, and it has been our experience that tuberculosis increases in a direct proportion to the lowering of the economic level.

Furthermore, our experience among employed adults as compared to the unemployed has shown consistently more significant disease among the latter. Thus, the economic background of the individual is a determining factor in the prevalence of tuberculosis.

Drs Plunkett and Katz have wisely emphasized the importance of re-examination of the students in the normal schools. A single survey indicates only the disease apparent at the time and gives no assurance of the future safety of the individual so far as tuberculosis is concerned. In those groups with an appreciable amount of tuberculosis, plans should be made to repeat the examination at periodic intervals during the age period in which the individual is most likely to develop the disease.

Dr Paul B. Brooks, *Albany, New York*—Reference has been made in the course of this discussion to what was called a "peculiar biologic influence" that seems to have been at work and to have been a factor in the general decline of tuberculosis. Among the other important factors mentioned was improvement in housing and living conditions. It has been a puzzling thing to me that the progressive decline has seemed to be general practically the same in sections where there have not been many changes in living conditions and where comparatively little preventive work has been done as in the

others in which the work has been intensive for years and in which there have been material changes in living conditions I cannot help feeling that the most important factor is this "biologic influence," whatever it is. Has it been a general decline in virulence of the tubercle bacillus, a general accumulation of some degree of immunity, or a combination of the two? Perhaps some of the tuberculosis experts would be willing to venture an opinion.

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(In the treatment for diabetes some physicians with home offices serve breakfast to patients after the administration of insulin)

Most human lives are fraught with ills,  
Some cured by knives and some with pills,  
But few entirely escape,  
And go through life in first-class shape  
Now, of the several diseases  
That in their deadly clutches seize us,  
And for which physicians treat us,  
Is the insidious diabetes  
One don't suspect that he has got it  
Until by accident they spot it  
When one's examined for some other—  
Perhaps imaginary—bother  
Then, if in luck, perhaps you'll pass  
Into the doctor's morning class  
At nine you seek the doctor's door,  
As many others have before,  
And to the nurse, a charming miss,  
You hand your specimens of—this  
Detail needs no explanation,  
Though 'tis a source of information  
Then, in the waiting room you'll find  
A group of others of your kind  
Graciously they all unbend,  
And greet you as an oldtime friend,  
For there's a sort of brotherhood  
Twixt those with sugar in their blood,  
For whether of high or low condition  
It seems to sweeten the disposition  
And so they're friendly with each other,  
Greeting a newcomer as a brother  
And here they sit and hold confab  
While waiting for the needle's jab,

This enters well beneath the skin  
And pumps one full of insulin

Ah, insulin! Good insulin!  
But for you what might have been?  
I might be lying stark and cold,  
Pushing daisies up through the mold  
Instead of which you and my diet  
Rouse emotions once almost quiet,  
And fill me with so much of pep  
That if I do not watch my step  
The chances are that I shall fail  
To keep outside the county jail

But I digress, my tale's not done,  
For, after jabbing every one  
We're sent into the breakfast room,  
A place that never harbors gloom,  
Where Mrs. Doctor, gracious hostess,  
Loves to cerealize and toast us  
And there we sit in friendly chatter,  
As if there's not a thing the matter,  
While in and out the doctor slips  
With good advice and merry quips  
I know of nothing that's more pleasant  
Than class meets with the doctor present

But, though the meetings of the class  
In a fraternal spirit pass,  
All those who hope to graduate  
Their vigilance must not abate,  
So be advised by him who writes,  
Obey the rules the doctor cites  
From ancient dame to little laddie  
We hail him as our sugar daddy

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# EXPERIENCES IN A THYROID CLINIC IN A GENERAL HOSPITAL

WILLIAM CRAWFORD WHITE, M D , New York City

FOR many years at the Roosevelt Hospital it had been the custom to treat thyroid cases in a routine manner as part of the general run of cases admitted to the medical and surgical wards. About ten years ago it was felt that better understanding of the disease and better treatment would result if the work was concentrated into the hands of a small group who would diagnose, treat, and follow up all such patients who came to the hospital. Also, in order that the knowledge so gained should be diffused throughout the staff, it was arranged that there should be a gradual rotation of men assigned to such work. This method has been followed out in the past eight years with the exception of our psychiatrist, Dr Robert W Laidlaw, who has rendered invaluable help throughout the whole period. In addition to Dr Laidlaw, two physicians and two surgeons have attended, once a week, a combined diagnostic and follow-up clinic.

At first the clinic was small. As the merit of this undertaking became evident its volume increased, so that each session now keeps the staff interested and occupied. When goiter was recognized or suspected in other outpatient departments, the patients were referred to the clinic for diagnosis and treatment. If surgery was indicated, the patient was referred into the hospital ward where she was placed under the care of the two surgeons who were in attendance at the thyroid clinic.

As a result of this specialized clinic, we have made certain observations and come to some conclusions we should like to relate.

## Terminology

We recognize the multiplicity of terms that have been used to describe the various pathologic conditions of the thyroid gland, together with their clinical manifestations. However, for the purpose of this paper we have endeavored to divide goiter into several broad groups, while at the same time we realize that there are some cases that might not fit readily into these groups. We shall use the following classification: (1) nontoxic nodular goiter, (2) chronic thyroiditis, (3) carcinoma, (4)

toxic nodular goiter, (5) hyperplastic diffuse thyroid disease with or without exophthalmos. It will be noted that we have not mentioned hypothyroid disease and its manifestations, as these patients were followed in the medical and pediatric services.

## Nontoxic Nodular Goiter

In this group we have included the nontoxic diffuse type of gland enlargement—the fetal, the solid, and the cystic adenoma. From the pathologic point of view there is much to be said in favor of calling these conditions steps in the same process. At any rate, for this paper they have been placed together.

The patients had been born in scattered areas of the United States and Europe, in areas where endemic goiter was known to be present, as well as in areas that were supposed to be free of the disease. Most of them had reached adult life before they had migrated to New York City. They usually applied for relief of deformity or pressure symptoms after many years with a known goiter.

All patients were subjected to a general physical examination, including a throat examination for vocal-cord function. In addition, a basal metabolism test was performed, and x-ray films of the neck and chest were made for evidence of tracheal deviation or compression, as well as substernal extension.

If the deformity is slight, a question naturally arises as to the need or propriety of surgery. At first we were inclined to permit such patients to go without surgical interference, with the advice to return to the clinic if the nodule grew or gave them trouble. However, in 3 patients who were operated upon for simple nodular goiter, cancer was unexpectedly discovered. Because of this experience we have changed our policy and now advise the removal of all nodules from the thyroid gland.

When the disease was confined to one lobe, the operator often was content to do a partial thyroidectomy of that lobe only. When more extensive, a bilateral partial thyroidectomy was performed. In view of the nontoxicity of the patient we were content to leave fairly large remnants. As would be expected, this group had but little postoperative disturbance. Their subsequent course in the follow-up clinic was uneventful.

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 9 1940

From the Roosevelt Hospital

There were 225 patients in this group. All had one-stage operations, with 2 deaths.

### Chronic Thyroiditis

Six patients who were thought to be in the previous group were suffering from chronic thyroiditis. One was also called Hashimoto's disease. The woman was 33 years of age and had a large uniform swelling, 175 Gm. were removed by Dr. Patterson. Subsequently, the thyroid remnant enlarged greatly, large axillary nodes appeared, and large abdominal masses appeared. All these quickly shrank under roentgen therapy. This would seem to justify a change of diagnosis to lymphosarcoma because of its behavior under roentgen ray, but our pathologist, Dr. Walter Brandes, still thinks that the thyroid tissue removed has the appearance of Hashimoto's disease. The 2 cases of Riedel's struma had simple convalescence with no further trouble. The other 3 had no further trouble.

### Carcinoma of the Thyroid

There have been 21 cases (4 per cent of the total) that were diagnosed as carcinoma of the thyroid. The 3 patients of malignant adenoma with blood vessel invasion were alive and well six, seven, and eight years after operation. The 10 cases of papillary adenocarcinomas on the whole did fairly well with surgery alone. Some have been free of the disease for years, others have had repeated recurrences with operation and survival for as long as fifteen years, while 2 died of metastases in ten months and seven years, respectively. Roentgen therapy did not appear to influence the course of the disease. The 8 cases of small cell adenocarcinoma did not do well in spite of surgery and roentgen therapy. One lived for one and one-half years, but the others died within a few months.

### Toxic Nodular Goiter

The diagnosis of toxic nodular goiter is a problem of a different sort and one that causes many a warm discussion. The typical patient was a woman in her forties or fifties who had known about her goiter for ten to fifteen years. She had postponed any treatment until the advent of nervousness, palpitation, insomnia, weakness, and perhaps some loss of weight. She had some menopausal symptoms. Many had social and economic problems that could easily cause anxiety neuroses. Physical examination would show some cardiovascular changes, while the basal metabolic rate would be around +30. Were they toxic thyroids?

Many proved to be otherwise. The combined efforts of psychiatrist, physician, and social workers often cleared up the picture so that operation for toxicity was avoided. In our early enthusiasm and ignorance we had promised relief of symptoms by surgery to some of these women, only to have them return to the clinic for years with a multiplicity of complaints.

It has now become our practice to postpone surgery and to try out other means of therapy first. If symptoms persist after reasonable effort has been made, the woman is referred to the ward for rest, iodine, and surgery. Of course, we relieve them of their deformity. At times we have had striking benefit. In others, symptoms have persisted so that we have finally had to conclude that the patient had not been suffering from toxicity at all. They were then classified as nontoxic nodular goiters.

There were 56 patients whose final diagnosis was toxic nodular goiter. Of these, 6 were done in two stages and 50 in one stage, with 6 deaths.

### Hyperplastic Diffuse Thyroid Disease with or Without Exophthalmos

There were 218 cases of diffuse enlargement of the thyroid gland with hyperthyroidism. Of these, 150 had exophthalmos. We found them to have the usual symptoms and signs in variable degree. Two were so sick that they died before surgery could be attempted. One committed suicide by jumping out of a window before operation.

Our decision to do an operation in one or two stages was largely determined by the general condition, the duration of the disease, the age, and the weight loss when first seen. If a decision is made to do a two-stage operation, this decision is adhered to no matter how favorable the response of the patient to rest and iodine and no matter how smoothly the patient appears to undergo the operation. We have sincerely regretted the breaking of this rule. On the other hand, we do not hesitate to change from a one-stage to a two-stage procedure if the response has not been satisfactory to rest and iodine and, lastly, if the reaction to the operative procedure does not seem favorable. Three had ligation of the superior thyroid arteries as a first step, while one-quarter (57) had two-stage procedures. There were 4 deaths in 215 patients who were operated upon—1 after a first-stage operation, and 3 after a subtotal one-stage operation.

We speak of surgery as if it were a matter of

course It is our preferred method of treatment, as we have not been favorably impressed with roentgen therapy as a curative procedure for hyperthyroidism in the cases that we have encountered

Persistence of symptoms after operation for toxic nodular goiter and after diffuse hyperplastic thyroid, especially the latter, is frequent enough to warrant radical removal at the time of the primary operation We try to leave only an estimated 3 to 5 Gm of thyroid gland in each lobe after complete removal of the isthmus and pyramidal lobes A small group had persistent symptoms because of inadequate primary surgery in our clinic or elsewhere In general, we have had fewer cases of persistent hyperthyroidism as experience increased and surgeons became more thorough, so that smaller remnants were left We have had 10 Roosevelt Hospital cases that developed a large new gland with renewed hyperthyroidism after such extensive surgery

Much has been written about the "masked" or "apathetic" thyroid We had 13 such patients who were subjected to surgery A few had splendid results, others, only fair We were unable to foretell which ones would have the best response There were no deaths in this group

### Recurrent Laryngeal Nerve Injury

We were unable to state exactly the number of recurrent nerve injuries due to the fact that all cases did not have vocal-cord examination before they left the hospital or subsequently We have a record of 14 unilateral palsies and 1 bilateral palsy In 3 we were unable to obtain a follow-up vocal-cord inspection In the other 11, the vocal-cord function had returned in a few weeks to two months after operation

The case with bilateral palsy required a tracheotomy One month later the right vocal cord was normal One year later the left cord was still paralyzed This finding agrees with the reports of others—that usually the palsy is only temporary, due to trauma or ischemia, and rarely due to division of the nerve In recent years, in an effort to avoid injury to the nerve, we have endeavored to visualize the recurrent nerves at operation To do so one must be reminded that the course of the inferior thyroid artery and the recurrent nerve is not that usually described in the textbooks The inferior thyroid artery is first seen coming from behind the common carotid artery and about opposite the middle of

the thyroid lobe It takes either a transverse course or else runs downward and inward The recurrent nerve approaches the thyroid lobe at an angle of about 45 degrees, running inward and upward to meet the inferior thyroid artery where it enters the gland The nerve goes either in front of or behind the artery or between its branches Since we have recognized this anatomy and visualized the artery and nerve, we have fortunately been free of nerve injury We feel that the thyroid resection may be performed with much more safety and assurance

There is one sequel to subtotal thyroidectomy that has often bothered us It is the loss of the ability to sing for a matter of months or permanently The patient has been subjected to operation, convalescence has been uneventful, and, before discharge, a throat examination has demonstrated normal movement of the vocal cords On recall, in response to inquiry, the patient has expressed herself as satisfied with the results of the operation except that she cannot sing as she had formerly Throat examinations have failed to show any reason for such failure

In an endeavor to find some possible cause for such failure, I have speculated upon the influence of injury to the superior laryngeal nerves Frazier and Erb<sup>1</sup> called attention to the fact that "the superior laryngeal nerve supplies the interarytenoid muscles, which are adductors of the posterior ends of the vocal cord Thus, if both superior laryngeal nerves are damaged, there may be partial loss of voice" They were interested in immediate postoperative complications as a result of injury to these nerves A study of the anatomy of the superior pole region shows that these nerves may readily be injured by sweeping an aneurysm needle around the upper pole in tying off the superior thyroid artery I believe, instead, that careful direct hemostasis with clamps should avoid such injury to the nerves and thus preserve complete vocal-cord function

### Parathyroid Tetany

There were 5 cases with tetany after operation with typical Chvostek's sign, tremulous tongue, carpal pedal spasm, and low blood calcium Three cleared up in a few days with the use of para-thor-mone and calcium gluconate One persisted for several months after a two-stage secondary operation for recurrence The fifth patient has had symptoms that have persisted in a mild degree for years I previously reported this case<sup>2</sup>

## Mortality

Three patients with hyperthyroidism died in the hospital without surgery. Five hundred and twenty-five patients were operated upon and 13 died.

Operations on 225 nontoxic nodular goiters resulted in 2 deaths with signs suggesting pneumonia.

Operations on 56 toxic nodular goiters resulted in 6 deaths. Their ages were 48, 65, 59, 47, 55, and 54. They had cardiovascular disease, hypertension, and goiters of many years' standing. Four had substernal thyroids. One died an anesthetic death, under avertin and cyclopropane, on the operating room table after thirty-five minutes of anesthesia. Two had first-stage operations only. One should never have been touched because of her bad heart.

Operations on 217 patients with hyperthyroidism resulted in 4 deaths—one after the first stage of a two-stage operation and the other 3 after a subtotal one-stage operation. The one with a death after the first-stage procedure should never have been touched. He was really inoperable. The others went into thyroid storms. The fourth became cyanotic with stridulous breathing and, in the opinion of one competent observer, should have had tracheotomy twelve hours before it was done because of a probable bilateral cord paralysis.

One of the 21 cancer patients died fourteen hours after an extensive subtotal thyroidectomy of "cardiac failure with pulmonary edema."

## Surgical Technic

Our surgical procedure is similar to that used in other clinics, especially after our surgeons had had opportunity to develop their skill and judgment with the concentration of cases. We keep the patient in the hospital for ten days to two weeks on iodine with frequent basal metabolism tests. We watch their general condition, their tachycardia, and their weight gain. If these factors are not satisfactory, we do not hesitate to wait longer. Avertin and nitrous oxide anesthesia is used by preference. Silk with no drainage has been the custom in recent years. We believe that the use of silk has reduced the amount of post-operative swelling and the need for drains. The ribbon muscles are divided when necessary because of the bulk of the gland. When two-stage operations are performed we have planned four- to six-week intervals between operations without iodine. After discharge, the

patient is seen at increasing intervals in the clinic.

## Summary

1 As a result of cooperation between the physician and surgeon we have avoided many needless operations. As our experience increased, so has this percentage increased. Many a patient with a basal metabolic rate of +30 when first seen is suffering from other than a thyroid disease.

2 The nodular goiter with nervous symptoms is often a difficult problem. The diagnosis of toxic nodular goiter should be made slowly and with caution. When operation is decided upon, careful preparation should be made. Stage operation should be employed if there is any question at all. Our highest mortality was in this group.

3 Operation for diffuse hyperplastic thyroid disease usually gives splendid results. In the follow-up the most striking evidence of proper diagnosis and successful operation is the rapid gain in weight.

4 When this disease is masked as in the so-called apathetic thyroid, the results may be strikingly good but often are only fair. These patients really have more than thyroid disease to contend with.

. . .

The thyroid clinic was organized and continued under the direction of Dr. Evan M. Evans, director of medicine, and Dr. James I. Russell, director of surgery. The following members of the staff have been in attendance at the thyroid clinic during the period covered by this paper: Drs. W. H. Button, Jr., J. A. C. Gray, J. H. Iselin, Jr., R. W. Laidlaw, R. Richards, H. W. Cave, H. A. Patterson, G. P. Pennoyer, and W. C. White.

## References

1. Frazer, C. H. and Erb, W. H. *Ann. Surg.* 101: 1353-1357 (June) 1935.
2. White, W. C. *Ann. Surg.* 96: 310-315 (Aug.) 1932.

## Discussion

Dr. Alfred H. Noehren, *Buffalo, New York*—Dr. White is to be complimented on the excellent and frank presentation that he has given us. He has shown us the difficulties and failures, as well as the successes, in the handling of thyroid cases.

In the second place, Dr. White and his group at the Roosevelt Hospital are to be congratulated on being among those who have recognized that, inasmuch as the diagnosis and treatment of thyroid diseases involve a number of specialties in medicine, they are best handled by a group of

men that not only represent these specialties but have made a special study of the thyroid gland. To differentiate a toxic thyroid case from the neuroses and other conditions simulating it, to prepare it for surgery, when indicated, to decide when that patient is ready for operation and whether or not to do it in stages, and to supervise the aftertreatment until the patient is restored to health—all these require a thorough study of each individual case and careful judgment. This is too much responsibility for one man to carry and should be shared with others. In my opinion, any surgeon who attempts to handle a toxic thyroid case from beginning to end without any help or advice is foolish.

Neither is it necessary that this group idea be confined to a large hospital, like the Roosevelt Hospital, or to the larger medical centers. It is just as possible and necessary in private practice and in the small community. Any well-trained surgeon in a town that is large enough to have a good hospital ought to be able to find at least one good medical man who would be willing to interest himself in these cases. If they then work up each case carefully, perfect their technic, keep up with the literature, visit clinics, and attend meetings (e.g., meetings of the American Association for the Study of Goiter), they ought to be able to have as good results as are obtained in the larger clinics, for what they lack in a large number of cases they make up in more personal attention to each case.

The classification of thyroid disorders which Dr. White has given us is a good one and, in his hands, probably as good as any. However, there are so many classifications, and no one of them is satisfactory to all (especially to the pathologists), that it would seem desirable that there be some agreement by the various clinics on one certain classification. We have for a long time used that recommended by the American Goiter Association and, clinically, find it satisfactory. It divides all disorders of the thyroid into two large groups, diffuse and nodular. The latter includes all single or multiple adenomas, whether they be fetal, developmental, or malignant. These two groups are each again divided into the nontoxic and the toxic. Thus, we have four groups: (1) nontoxic diffuse, which includes the simple adolescent, the endemic, and the diffuse colloid; (2) toxic diffuse, which is made up almost entirely of exophthalmic goiter; (3) nontoxic nodular, adenomas without toxic symptoms; (4) toxic nodular, those with toxic symptoms. These groups do not include the inflammatory condi-

tions of the thyroid, such as acute and chronic thyroiditis, Riedel's struma, and Hashimoto's disease, but these are easily placed in a group by themselves. If everybody would accept this or some other acceptable classification, then each would know what the other is talking about.

Dr. White speaks of the difficulty of deciding whether a case of supposed toxic nodular goiter is really toxic or not. We have found this difficulty more in the diffuse goiter—as when a patient with a neurosis happens at the same time to have a simple enlargement of her thyroid gland. In these cases, of course, a thyroidectomy is not indicated and only makes the patient worse. But in the nodular goiter, this distinction does not seem as important to us, because we believe, as does Dr. White, that every nodule in the thyroid gland should be removed anyway. Our reasons for this conviction are (1) because it may become toxic or more toxic at any time, (2) because it will probably grow and may cause greater pressure symptoms, and (3) because it has a 2 per cent (according to Dr. White's figures, 4 per cent) chance of becoming malignant. Therefore, any nodule should be removed whether it is toxic or not, but we should be careful, as Dr. White indicates, not to promise too much in the way of a cure of nervous symptoms.

Dr. White has touched slightly on operative preparation and technic. While this has become fairly well standardized, there are nevertheless some variations in the different clinics. We, for example, do not use avertin in our preoperative sedation. It has been proved that hyperthyroidism causes definite liver damage, and, as avertin is excreted by the liver, we are afraid it may further damage an already handicapped liver. We believe we get as good results with large doses of luminal. Neither do we routinely visualize the recurrent nerve, because it takes time, causes scar formation near the nerve, with possible later pressure on the nerve, and may even cause direct injury to the nerve in the very act of searching for it.

However, these are minor details, and each surgeon must use those methods that in his hands give the best results. That brings us back to our original point, the necessity for the careful study of each patient not only by the surgeon but by other interested specialists.

Dr. White's paper has done much to emphasize the importance of this point and for that alone, to say nothing of its many other interesting aspects, is a most important contribution to a better understanding of the thyroid problem.

#### BOWLING—A M A MEETING

Plans are on foot to have a bowling tournament during the next meeting of the American Medical Association, June 2 to 6, 1941, at Cleveland. It is hoped that teams can be

formed representing various states. Physicians who are interested in bowling should contact Dr. Lewis W. Bremerman, 1709 West 8th Street, Los Angeles, California.

# THE PRIVATE PHYSICIAN—AN IMPORTANT LINK IN SCHOOL MEDICAL SERVICE

JACOB H. LANDES, M.D., New York City

THE private physician is an important contributor to the public health program. Public health agencies know that if there is to be better health for the entire nation the practitioner must be a partner. Every physician, especially the general practitioner and pediatrician, can be an assistant health officer. Indeed, it is an axiom that the official health officer, if he is to be an effective force in a community, must have the support of the local medical society and its component membership. Fortunately, the private practitioner, almost without exception when properly approached, is quick to assist the health officer in his public health program. Private medicine has even played a role of leadership in many instances to achieve public health advances.<sup>1</sup>

In every day practice, however, the private physician may not think his contribution to the public health program especially dramatic. When he thinks of his role as "assistant health officer," he is apt to think of the routine reporting of data on birth and death certificates or the furnishing of somewhat rather obscure health information for purposes of official record. In fact, as Thomson<sup>2</sup> said recently, the private physician may only know the public health officer "because of his vexatious reports and statistics," and the health officer, forgetting the trying demands of private practice, may think of the private physician when he demurs about the paper work as an obstructionist. Goodrich<sup>3</sup> has suggested that health worlds might be conquered by common understanding and joint efforts of private medicine and public health. He said "We do not understand each other well enough to benefit our people with an adequacy of service comparable with our conjoined abilities in a state of fusion."

What opportunities are there for public health and private medicine to fuse their efforts? The school health program in New York City offers an excellent opportunity. The private practitioner examines many children who enter school for the first time, and he renders essential treatment to school children discovered to have physical defects by the school medical examination. It is the

purpose of this paper to illustrate the part played by the private physician in relation to school medical service in the Washington Heights and Riverside health districts of New York City.

In the New York City health service it is the policy to recommend that newly admitted children be examined by their own physician. During school registration week in September and February, special emphasis is laid on this policy. Principals take an active part. The health department assigns physicians and nurses to the schools for the express purpose of meeting parents and to urge that the child's medical examination and diphtheria immunization be carried out by the family physician. That such a policy brings children to the attention of the family physician can be gleaned from the record of the increasing number of private physicians' examinations in the New York City schools.

In the fall of 1938, 21.5 per cent of the total number of children examined in the schools were examined by private doctors. This percentage rose to 26 in the corresponding term of 1939. In the Washington Heights District the proportion of private physicians' examinations was still greater. In the fall term of 1938, 24.2 per cent of all school examinations were performed by private physicians, and in the corresponding school term of 1939, 511 children, or 29.6 per cent of a total of 1,725 children examined, were examined by private doctors. At the writing of this report, it is evident that the private physicians' examinations in the fall term of 1940 will be still higher.

Cooperation with family physicians is not limited to medical examinations. In the routine medical examinations performed by school physicians, children discovered to have physical defects are referred to their own doctors for consultation and treatment. This is not limited to the Washington Heights District but is part of the general program of the New York City Health Department.

The attempt will be made to describe two special projects that involved private physicians' participation. These were inaugurated in the Washington Heights and Riverside districts and were concerned with the referral of special groups of children to the family phy-

<sup>1</sup>District Health Officer, Williamsburg-Greenpoint District, Department of Health.

TABLE 1—DIPHTHERIA IMMUNIZATION STATUS OF 532 CHILDREN—RESULT OF QUESTIONNAIRES ANSWERED BY 336 PRIVATE PHYSICIANS

	Status	Number	Percentage
1	Previously immunized	159	29.9
2	Private physician promised to immunize	207	38.9
3	Children referred to school for immunization	41	7.7
4	Children referred for further check-up	125	23.5
Total		532	100.0

physician for diphtheria protection and medical examination. Without these particular efforts undertaken, the children probably would never have been immunized or examined.

During the latter part of 1938 and the early months of 1939, a special drive was made in New York City to immunize school children under 10 years of age against diphtheria. Children selected for immunization were those never before immunized or those children who had been immunized more than three years prior to the campaign. The children were divided into two groups. The first group consisted of those who had been examined by school physicians, and the second group, of those who in the past had been examined by their family doctors. A number of children had no indication on their medical record card of previous immunization against diphtheria, and their status of immunity was unknown at the time this survey was undertaken. It may be definitely asserted that few, if any, of those children had received a supplementary inoculation, since the Department had, only a short time previously, officially recommended a supplementary injection. In view of the fact that there was a large number of such children who had been previously examined by their own physicians, it was decided to refer to them all children able to pay for necessary immunization. This is in keeping with the department's policy of regarding the private doctor as an active public health worker.

Nurses of the public and parochial schools were asked to obtain the names of such children (1,329) as well as the names of the doctors who examined them. The writer forwarded a questionnaire to each doctor requesting the following information pertaining to the immunization status of the child under investigation:

- (1) Has the child ever been immunized, recently Schick-tested, or immunized within the past three years?
- (2) If the child was not immunized within the last three years and if his Schick

status is unknown, do you wish to immunize that child?

- (3) If the answer to number 2 is in the negative, do you desire the immunization to be done by the school physician?

Of the 1,329 questionnaires forwarded to doctors, 532 or 40 per cent were returned by 336 doctors (Table 1). Of the 532 children, 159 had been recently immunized or had received a Schick test. This was a result of our campaign for diphtheria immunization, which had by that time been in progress for several months. The physicians agreed to immunize 207 children themselves. They further stated that 41 children could not afford to pay for the service and were, therefore, referred to the school physician for immunization. With the balance of 125 children the nurses were asked to contact the parents and refer them to their physicians if the parents were in a position to pay for this medical service.

It is thus clear that, of the replies we received, at least 40 per cent, 207 in number, were referred back to the physician for diphtheria immunization. Most of the 125 children whose statuses were unknown to the doctors were ultimately interviewed by the nurses and many of them referred to the doctors for protection. The school physician administered the injections to those children for whom no response was received from the private physicians, thus assuring the protection of all children.

In keeping with the policy recommended by the American Academy of Pediatrics and also to educate the parents of the value of periodic medical examinations by the family physician, the following project was undertaken:

Because of the limited medical personnel in our school health service, only a small proportion of our elementary school children can receive a medical examination at some time during their school career. The health department policy calls for an examination of newly admitted children and others referred for some special problem by the teacher, principal, or nurse, excluding, of course, children previously examined by private doctors. Many children, therefore, may go through their elementary school career without visiting a physician, unless some special condition arises necessitating an examination. In looking over our school medical cards, we found large groups of children without a record of a previous examination, although some may have been examined in the past at a school other than the one they were then attending.

Eighteen schools, approximately one-half the number in the two districts and covering sections of better economic circumstances, were selected. In those schools we found 1,243 children in the upper grades in whom a medical examination was warranted. Our project of referring children to their private doctors for examination showed promise.

A letter from the health officer was sent to each mother informing her that her child did not have a record of a medical examination since admission to school and urging her to take her child to a doctor for this examination. Included with the letter to the parent was a medical form for the physician to fill out, as well as a short note to the doctor explaining the necessity for a medical examination. This campaign was conducted from April through June, 1940. By the end of June, 455 children, or 36.5 per cent of the total to whom letters were given, had visited their doctors and returned the medical forms filled out. It can safely be said that had not the school term ended, more of these questionnaires would have been returned. However, the balance of the children are being followed up by the

nurses, and many of them will no doubt be examined during the fall school term.

The efforts expended in this campaign proved to be fruitful, particularly since all of the 455 examined were children in the higher grades. Few, if any, would have been examined had the campaign not been undertaken.

### Summary

The importance of the private physician in school medical service has been pointed out. Examples where an official health agency has benefited the profession were cited. These included a campaign for the immunization of school children against diphtheria, as well as the examination of upper grade school children by family doctors. Such help to private physicians should be encouraged, since the community, as well as the official health agency, is ultimately benefited.

### References

- 1 Editorial. J.A.M.A. 115 No 20 1722 (Nov 16) 1940
- 2 Thompson, Alec N. New York State J Med 40 No 20, 1498-1500 (Oct. 15) 1940
- 3 Goodrich, Charles H. Am J Pub Health 28 No 8 923-928 (Aug) 1938

### GOOD ADVICE ON PUBLIC SPEAKING

The Brown Publishing Company, of Blanche, Ohio, recently published some timely tips on public speaking. In view of the fact that an increasing number of physicians are being invited to speak before lay groups, their suggestions are reproduced in the *Pennsylvania Medical Journal*.

#### Principles

"1 Always know in advance what you are going to say. Avoid nervous habits such as rubbing the chin, fingering the buttons on your coat, etc.

"2 Pause a moment before beginning to talk after you get on your feet. A short purposeful silence always gets attention—it gives the audience a chance to compose itself.

"3 Speak slowly and distinctly—articulate each word—pronounce each syllable correctly. Do not speak too loudly at first—cultivate the easy, but firm delivery.

"4 Talk to your audience in the back of the room—not to the men near you.

"5 Be yourself—don't pose—show by your manner that you know your subject.

"6 Avoid unnecessary repetition. Quote a few facts and figures—they serve to give your words the weight of authority.

"7 Loosen up—practice a few gestures—not too many—to give emphasis to your delivery.

"8 Use dramatic pauses. A pause in the right place is eloquence. It focuses attention and crystallizes interest.

"9 Develop a variety of tempo. Don't

drone or have a sing-song delivery. Give inflection to important thoughts and sentences.

"10 Finish vigorously. Hold up the last sentence and when you have finished, pause a moment, bow slightly—don't say 'thank you'—just quit and sit down.

"11 Allow yourself plenty of time before the date of your address to build up your talk. Jot down all the points you want to cover and arrange them in proper sequence.

"Remember, public speaking is just like making a sales talk to an individual."

#### Specific Points

"Arrange your talk to get your audience to agree with you—quoting a few facts or figures that your audience knows to be correct will accomplish this.

"1 Introduction. A word or two of local interest—reference to previous speakers or tactfully complimenting the audience.

"2 Tell a story if you have a good one—otherwise this is omitted.

"3 Arguments or opinions.

"4 Climax—put over vigorously with gesture and emphasis in the voice.

"5 Conclusion or summary if necessary. Usually it is best to quit at the end of the climax.

"Avoid reading manuscript—it is monotonous and boring to the average listener.

"Don't attempt to be funny. Earnestness, dignity, and poise are far more valuable than attempting to be a humorist."

# THE CLINICAL SIGNIFICANCE OF BACTEREMIA

CHESTER S. KEEFER, M.D., Boston

THE presence of bacteria in the circulating blood is of significance in both diagnosis and prognosis. In the case of such infections as typhoid fever, the diagnosis is frequently established by isolating the typhoid bacillus from the circulating blood. When an organism such as the pneumococcus is found in the blood usually it is of greater importance in prognosis than in diagnosis, since the diagnosis of pneumococcal infection has generally been made before the organism is isolated from the circulating blood.

I propose to summarize the results of a study of 479 cases of bacteremia due to a variety of microorganisms, but, before discussing the clinical significance of bacteremia, it is well to review some of the facts concerning bacteremia in general. When inert particles such as carbon are injected into the blood stream of an animal, they are promptly removed by the phagocytic cells of the body, and they can be found in the reticuloendothelial cells of the liver, spleen, lymph nodes, and other organs. If one injects an avirulent organism into the blood stream, they likewise are removed from the circulating blood by the phagocytic cells and destroyed. However, if a virulent organism is injected into the blood of an animal, a different sequence of events occurs. At first the number of organisms in the circulating blood is temporarily reduced, but they soon increase and the animal dies. At necropsy, one finds numerous organisms in the various organs of the body.

These experimental studies in animals can be duplicated in large part in cases of bacteremia as it occurs in man. Of course, all of you realize that bacteremia in man is not produced by injecting organisms into the circulating blood. Organisms enter the blood stream from various portals of entry by invasion of the lymphatics and capillaries. Once they invade the blood stream they may or may not be cleared, and localized abscesses or metastases may or may not develop, depending upon the balance and summation of a number of factors, such as the location of the primary lesion, the type of infecting organism, and the efficiency of the normal defense mech-

anism. Thus, one may see (1) bacteremia—no clearing of the blood stream, rapid death, (2) bacteremia—clearing of the blood stream, recovery without abscess formation, (3) bacteremia—clearing of the blood stream, recovery or death with abscess formation, and (4) bacteremia—no clearing of the blood stream, abscess formation and death.

In general, one can say that in group 1 no antibodies are present. In group 2 the bacteremia is due to a relatively avirulent organism, or there is a temporary invasion of the blood after the rupture of the local defense mechanism. In group 3 the focal infections develop as a result of the development of antibodies, and in group 4 antibodies are present, but the focus of infection is situated in an area where sterilization is difficult or impossible.

With these facts in mind we may now proceed to discuss various features of bacteremia in man which are of significance in both diagnosis and prognosis.

## The Significance of Isolating Organisms from the Circulating Blood Without Signs of Localizing Infection

In a certain number of infections bacteria are isolated from the circulating blood without any localizing signs of infection being obvious. Valuable information is obtained concerning the nature and possible local focus of the infection by the identification of the organism. The bacteria which may be found in the blood without any localizing signs of infection are typhoid-paratyphoid bacilli, *Bacillus melitensis*, meningococci, and gonococci, less often the common pyogenic organisms, such as *Streptococcus hemolyticus*, *Staphylococcus aureus*, or *Bacillus coli* are found. *The presence of bacteremia due to the common pyogenic organisms, without local signs of infection, should always suggest an intervascular focus, such as an infective thrombophlebitis or endocarditis.*

Hemolytic streptococcal bacteremia without obvious local signs of infection should suggest (1) thrombophlebitis of the pelvic or the tonsillar veins or the veins of the skull, or (2) endocarditis. I have seen 1 case of hemolytic streptococcal bacteremia arising from an abscess of the aorta and another case in which the focus was an abscess of the spleen, but obviously these are rare. In about 10 per cent

Read by invitation at the Annual Meeting of the Medical Society of the State of New York, New York City, May 9, 1940.

From the Evans Memorial and Massachusetts Memorial Hospitals and the Department of Medicine, Boston University School of Medicine.

TABLE 1—INCIDENCE AND FATALITY RATES IN BACTEREMIA DUE TO DIFFERENT ORGANISMS

	Total Cases	Percentage Died
Hemolytic streptococcus	250	70
Staph. aureus	122	80
Pneumococcus	54	80
B. coli	40	35
B. Friedländer	10	100
B. influenzae	3	33
Total Cases	479	

of the cases of hemolytic streptococcal bacteremia no local focus is found. Some of these patients now recover without developing local signs of infection following sulfanilamide, and the portal of entry is never found.

*Staphylococcus aureus* bacteremia without localizing signs of infection usually indicates an infective endocarditis or an osteomyelitis that has failed to produce focal symptoms. Other foci of infection which may be responsible for the bacteremia are located in the kidney, prostate, or muscles.

*Pneumococcus* bacteremia without pneumonia is seen in (1) osteomyelitis, especially in children, (2) paranasal sinus disease, (3) pneumococcal infection of the peritoneum or biliary passages, especially in patients with a latent cirrhosis of the liver or lipid nephrosis, (4) pneumococcal endocarditis.

*Colon bacillus* bacteremia without local signs of infection is rare. However, it may be seen in multiple abscesses of the liver following abdominal operations (gastric resection or intestinal resection) and in rare cases of biliary tract disease, endocarditis, or cirrhosis of the liver.

*Streptococcus viridans* bacteremia occurs most often as a sign of bacterial endocarditis. Aside from this disease, it may be encountered in rare cases of cholangitis (cholangitis lenta), in subacute endocarditis, and in an infected arteriovenous aneurysm. As a transitory phenomenon, *Str. viridans* bacteremia may be seen following tonsillitis, tonsillectomy, or the extraction of teeth. It may also be discovered during the course of many chronic diseases such as rheumatic fever, chronic arthritis, and lupus erythematosus. The interpretation of *Str. viridans* bacteremia, therefore, must be made on the basis of the clinical picture and the local symptoms and signs.

In Table 1 there are presented the incidence and the usual fatality rate in 479 cases of various types of bacteremia. These cases have been studied by me during the past ten years.

*Hemolytic Streptococcal Bacteremia*—This is the most frequent type of bacteremia en-

TABLE 2—HEMOLYTIC STREPTOCOCCIC BACTEREMIA, 250 CASES

	Total Cases
Portal of Entry	
Throat, middle ear and mastoid	70
Uterus	43
Skin	62
Lungs	20
Others	55
Without Metastases	154
With Metastases	
Arthritis	49
Subcutaneous abscess	17
Endocarditis	11
Osteomyelitis	4

countered in medical practice. The organisms enter the blood most often from (1) the middle ear and mastoid process, including the lateral sinuses of the skull, (2) the uterus, (3) the skin and subcutaneous tissues. Prognosis is always grave, since without chemotherapy the fatality rate is 70 to 75 per cent. Metastases are present in only about 40 per cent of the cases, and they occur most often in the joints, subcutaneous tissues, and endocardium. Other less common sites for metastases are the bones and the lung. When spontaneous recovery follows bacteremia, there is usually only a transitory invasion of the blood from a focal lesion, or the blood is cleared of organisms and focal infection is established. Complete recovery commonly follows the treatment of the local lesion surgically, with or without the use of chemotherapy. Death occurs among patients with debilitating diseases, in those with rapidly spreading infection without localization, and in those in whom localization occurs in an area which cannot be treated surgically—that is, in the peritoneum, endocardium, or meninges. The portal of entry and the distribution of metastases in 250 cases of hemolytic streptococcal bacteremia are shown in Table 2.

*Staphylococcus Aureus Bacteremia*—This type of bacteremia is second in order of frequency when all organisms are considered. Here, again, the prognosis is grave since the fatality rate is usually in the neighborhood of 80 to 85 per cent. The common portals of entry for the *Staph. aureus* are (1) the skin, (2) the respiratory tract, (3) the bones, and (4) the genitourinary tract, including the uterus. *Staph. aureus* bacteremia is seen most often during the second decade, when lesions of the skin, the respiratory tract, and bones are common portals of entry. Metastatic lesions are frequent and occur in about 82 to 85 per cent of all cases. In 10 per cent of the cases there is direct extension of infection from the primary focus to neighboring organs,

TABLE 3

	Number of Cases	Per- centage Died	Per- centage
Staph Aureus Bacteremia	122	81.9	
Portal of Entry			
Skin	57	86.0	
Respiratory tract	30	86.7	
Bones	11	54.5	
Genitourinary tract	11	72.7	
Unknown	12	91.7	
Phlebitis	1		
Metastatic Lesions			
With metastases	98		82.0
Without metastases	24		18.0
Superficial abscess	33		
Pneumonia	37		
Osteomyelitis	14		
Endocarditis	7		
Meningitis	7		
Fatality Rate			81.9
Under 40 years			75.0
Over 40 years			97.5

such as the middle ear, mastoid, and lateral sinuses of the skull, in the remainder, metastases occur in various organs of the body. Abscesses of the lungs, superficial abscesses of the muscles, osteomyelitis, and arthritis are frequent. Indeed, abscesses may occur in many organs during the course of this type of sepsis. As a rule, the patients have high, remittent, irregular fever with leukocytosis, and organisms are isolated from the blood with ease. When patients die without developing foci of infection, the course is usually rapid and lasts less than ten days. A few of the important facts concerning these cases are summarized in Table 3.

*Pneumococcic Bacteremia*—The finding of pneumococci in the circulating blood is most frequent in patients with pneumococcic lobar pneumonia, and between 25 and 40 per cent of all patients with pneumococcic pneumonia develop bacteremia at some time during the course of their disease. In addition to the cases of pneumococcic bacteremia in pneumonia, there are instances in which pneumococci are found in the circulating blood without a preceding pulmonary infection. In the vast majority of these cases the organisms invade the blood from the throat, middle ear, or mastoid process, and only rarely from such foci of infection as a cholecystitis, infection of the biliary passages, or a pyelonephritis. In a certain small number, there is no obvious portal of entry.

Insofar as bacteremia in pneumonia is concerned, the following facts are of considerable importance and interest. Bacteremia increases in frequency with advancing age, so that it is about three times as frequent over the age of 40 as under 40. Regardless of the day of illness on which it is detected, bacteremia is always of serious importance, since the

fatality rate is three to four times as high in bacteremic patients as it is in those without bacteremia. While it is always of serious prognostic importance, more patients recover with bacteremia under 40 years of age than over. There is some difference in the frequency with which various types of pneumococci invade the blood. For example, types II, V, and I are encountered most often and types III, VII, and VIII, less frequently. The highest fatality rates with bacteremia are seen in types III, VII, V, I, II, and VIII, respectively. Often, bacteremia is seen in those who have multiple lobes involved, leukopenia, severe abdominal distension, deep cyanosis, delirium, and pulmonary edema. It is much less frequent in patients who are treated with specific antipneumococcus serum, sulfapyridine, or sulfathiazole.

The fatality rate in bacteremic patients who do not receive specific treatment varies between 50 and 100 per cent, depending upon the type of pneumococcus, age of the patient, and other associated factors. In general, it can be said that, of the bacteremic patients recovering without specific treatment, the number of colonies of pneumococci in the blood is generally less than 10 per cubic centimeter. If the number of colonies increases in successive blood cultures or if the blood culture is positive more than once, the prognosis is worse than if there is a single positive blood culture with a small number of organisms. By and large, most patients who have bacteremia with pneumococcic pneumonia do not develop metastatic foci of infection. They either die before a sufficient time elapses for suppuration to take place or the blood is cleared of organisms and recovery follows. When metastases occur, however, they are found most often in the subcutaneous tissues, in the meninges, in the endocardium, and less often in the joints. *Repeatedly positive blood cultures due to the pneumococcus following pneumonia or serum treatment should always lead one to suspect an active, vegetative endocarditis or meningitis or both.*

When pneumococcic bacteremia is present without a preceding infection of the lung, one usually finds that the portal of entry is in the mastoid process or middle ear, rarely in the biliary tract or the paranasal sinuses. One curious thing is the high frequency of pneumococcic bacteremia in patients with hepatic cirrhosis and in the nephrotic syndrome. Bacteremia occurring without signs of localizing infection, then, should always lead one to suspect some underlying disease of the liver.

*Bacillus Coli Bacteremia*—The normal habitat of the colon bacillus is in the gastrointestinal tract. Once the organisms leave this region and localize in such organs as the kidney or uterus, they frequently set up a suppurative lesion. *B. coli* bacteremia is less frequent than that due to other common pathogens. The chief portals of entry are the urinary tract, the female genital tract, the intestinal tract, and the biliary system. It occurs most often in women during the child-bearing period, i. e., between 20 and 40 years of age, and in men during middle and old age, i. e., between 40 and 70 years of age. This corresponds to the increased incidence of *B. coli* infections of the genital and urinary tract during these age periods in women and men, respectively. In only about one-third of the cases is the invasion of the blood a spontaneous one, since in the remaining cases a rupture of the local defense mechanism, usually by operative manipulation, is a factor preceding, and possibly initiating, the blood-stream invasion. Metastatic lesions are infrequent and occur in about one-fifth of the cases. They are seen especially in the cases of genital tract infection, and the lungs and kidneys are the two organs showing signs of metastatic infection. The fatality rate is about 30 to 35 per cent, and of chief importance in prognosis is not the bacteremia itself but rather the extent, severity, and location of the primary focus.

*Miscellaneous Types of Bacteremia* *Friedländer's Bacillus*—Bacteremia due to the Friedländer bacillus usually comes from a focus in the lungs, biliary tract, or kidney. Metastases and secondary waves of bacteremia have been seen following infections in the bones, joints, and other organs. Temporary waves of bacteremia follow the rupture of the local defense mechanism in the urinary or biliary tract. Much less commonly, spontaneous waves of bacteremia come from liver abscesses, pyelophlebitis, and renal tract infections. The presence of these organisms in the blood always suggests liver abscesses, renal infections, or pulmonary disease. Examination of the lungs and urine often establishes the portal of entry.

#### Comment

In this discussion I have outlined the relative frequency of bacteremia due to various organisms, and I have discussed those factors in experimental bacteremia which bear on the problem in man. From a study of immune reactions in man with bacteremia, certain facts

emerge which aid in understanding both the mechanism of bacteremia as well as the mechanism of recovery and the indications for proper treatment. It is well to stress the fact once again that bacteremia is an indication of the loss of equilibrium between the normal clearing mechanism of the body and the local defense mechanism. Usually it indicates an absence, or at least a very low titer, of antibody in the circulating blood and an active local focus of infection. When metastatic foci of infection appear, this may be taken to be evidence for the presence of antibody or a strong local defense mechanism. In any patient with bacteremia, measures of benefit should be directed along three lines: (1) to attack the primary focus, (2) to aid in the clearing of the blood stream, and (3) to assist in the destruction of the organisms. At present, this is possible in the case of many infections by means of combined specific serum and chemotherapy. It is well to recall that specific serum therapy slows up the growth of organisms and, in the case of gram-positive organisms, prepares them for phagocytosis and destruction. Chemotherapy with the sulfanilamide compounds causes death of small numbers of organisms, but their principal action is to decrease the rate of growth and allow the body ample time to mobilize the defense mechanisms of the body. In the case of specific serum the beneficial action begins immediately after exposing the organisms to serum, whereas, in the case of chemotherapy the action is maximal only after the organisms have been in contact with the drug for at least six to eight hours.

It is well, then, in any patient who has bacteremia, to use chemotherapy and, when it is available, to use specific serum therapy as well. In this way the body is provided with additional forces to combat infection.

#### Conclusions

The clinical significance of bacteremia has been reviewed, and the characteristics of the common types of sepsis have been outlined.

Bacteremia is always an index of a serious infection, and it is of great value in assessing the outcome in individual cases.

Microorganisms do not multiply in the circulating blood but usually are present as an overflow from various foci of infection. It is necessary, therefore, to aid the body in the destruction of organisms by (1) removing the primary focus and (2) increasing the efficiency of the defense mechanism by adding specific immune serum and chemotherapy.

## Discussion

Dr Ward J MacNeal, *New York City*—This paper of Dr Keefer is timely—first, because of an increasing interest in infections of the blood stream largely as a result of important newer additions to our means of dealing with these conditions, and, second, because of the confusion with regard to these infections in the minds of many recent graduates in medicine, due in great part to the inadequate or misleading statements found in the sections on bacteremia, septicemia, and infections of the blood stream in some modern textbooks. One may grant that the word septicemia belongs to the clinician and signifies blood poisoning or corruption of the blood, however definite or indefinite may be the ideas expressed by these terms. On the other hand, the terms bacteremia and infection of the blood stream belong to the more modern biologic era and signify the actual presence of microorganisms in the fluid tissue known as the blood.

The diagnosis of blood-stream infection rests upon (1) clinical observation of fever with or without chills and especially metastatic localizations of infection which have evidently resulted from transport of microbes through the circulating blood, (2) microscopic demonstration of the microorganisms in the blood, (3) positive blood culture, and (4) positive transfer of the infection by inoculation of blood. The evidence in one category may be convincing even without other support.

Personally, I feel unable to acquiesce in the broad statement that microorganisms do not multiply in the circulating blood. I believe that dividing forms of microbes have been reliably identified in the blood in tertian and quartan malaria of human adults, and I have preparations showing dividing forms of estivo-autumnal parasites in the erythrocytes of children. Dividing forms of trypanosomes are abundant in the blood plasma of infected animals and are seen also in human trypanosomiasis. None can seriously doubt the active multiplication of spirochetes in the blood in relapsing fever and in the early secondary stage of syphilis. In chicken cholera of fowls and in bubonic plague and anthrax of mammals, including man, the proliferation of bacteria in the blood stream can hardly be questioned. Pepper and Farley have observed the meningococcus and also the staphylococcus within leukocytes of the circulating blood of man, and in 3 cases of staphylococemia I have made similar observations. The cocci within the leukocytes present the appearance of dividing forms.

We can agree in recognizing a stage of infection in which the microbes have been driven out of the circulating blood but still persist in certain locations in the body, and we can agree that there is an intermediate stage when the microbes are about to disappear from the circulating blood and would be quickly eliminated if further invasion of the blood from stationary foci could be prevented. At this stage the removal of such

foci hastens the recovery, sometimes in a dramatic fashion. Discretion in such cases, however, should not be neglected.

Dr Frank L Meleney, *New York City*—I am sorry to say that I did not have the opportunity of reading and studying the paper as it was presented by Dr Keefer. My comments must, therefore, be extemporaneous, although I would first like to give you some idea of my conception of the pathogenesis of septicemia.

When bacteria enter the physiologic interior of the body, the actual number is probably small—tens, scores, perhaps hundreds, but not thousands or millions. They are usually introduced through a break in the surface either of the skin or the mucous membrane which serve as the primary defenses of the body. They are then surrounded by dead or injured tissue or foreign bodies. Many of them are not in a favorable growth phase to adapt themselves to the new environment, and they fail to grow and metabolize and are destroyed by the phagocytes which are attracted to the site of the injury. A few of them, however, find the environment suitable for their metabolic activities, and they may be protected from the local defenses by the injured tissue or by the foreign bodies. They proceed to multiply, form a colony, and produce their poisons. These poisons may attract or repel the phagocytic wandering cells, or they may liquefy the dead tissue or kill or injure living tissue. If leukocytes are attracted, the organisms may be phagocytized by them. Sometimes they are killed by the phagocytes, and sometimes they continue to grow within the phagocytes until the bacterial colony breaks the cell membrane and destroys the cell. Sometimes they are carried into the lymph system or the blood vessels by the phagocytic cell. If they gain entrance into the former, they may be filtered out by the lymph glands and either be destroyed in the glands or continue to grow and break down the gland tissue and thus form a metastatic focus. If they gain entrance with a phagocyte into the blood stream, they may be destroyed there or may be carried to other parts of the body, be caught, and be destroyed by the endothelial phagocytes or start a new focus in some capillary channel in some favorable location.

If they are not carried by phagocytes but continue to grow at the site of entrance, they sooner or later come into contact with lymph or blood capillaries. The colony is surrounded by a concentrated zone of bacterial poison which acts upon the surrounding tissue but is diluted and to some extent carried away by the circulating fluids. This gives rise to general symptoms of intoxication. Individual organisms in the periphery of the colony are also subject to the movement of the circulatory lymph and may be carried away by it. This fluid makes its way into the lymph system, but the organisms are temporarily checked by the closed system of the

endothelial membranes. It may be that individual organisms are carried in between the endothelial cells with the fluid, or the organisms may multiply and start a new colony on the outer surface of the capillary wall. Sooner or later, the poison produced by the main colony or the secondary colony of bacteria acts upon the capillary wall. It may either liquefy it or produce an inflammatory reaction resulting in closure of the capillary wall or clotting of the fluid within it. The same effect is produced on larger vessels, venules, and arterioles. As the process advances, the larger veins and arteries become thrombosed and then liquefied, a sterile portion of clot progressing in both directions ahead of the infection and liquefaction.

When the clot reaches a large vessel it may break off and be carried peripherally; if that vessel is an artery, or centrally if it is a vein, and may be filtered out by some capillary too small to let it pass. If the clot is small and sterile, nothing of importance happens. If it is large enough, it may mechanically cause local gangrene or even death—for example, a large pulmonary embolus. If the clot contains bacteria, it may produce another focus of infection from which the process may be repeated.

It is not surprising, therefore, that from any infected focus, either primary or secondary, there is a constant entrance of bacteria into the blood stream, either as individual organisms or incorporated in a blood clot. The number will depend to a considerable extent upon the virulence of the organisms, their ability to multiply within the area of infection, and the potency of their toxins to kill or injure tissue.

When a blood culture is taken from a peripheral vein at the elbow, any organism that is recovered has passed the gauntlet of the lung capillaries and the capillaries of the periphery of the forearm or hand. The lungs filter out most of the embolic clots, and the endothelial cells pick up the individual organisms. If an attempt is made to determine the number of organisms per cubic centimeter of the peripheral blood by means of agar pour plates, we find that even extremely sick patients seldom yield more than 100 colonies per cubic centimeter of blood. This is a surprisingly small number if one considers that an ordinary twenty-four-hour broth culture of bacteria has anywhere from one to five billion organisms per cubic centimeter.

The presence of bacteria in the blood stream is simply an indication of what is going on around the distributing focus. The continued presence

of bacteria in the blood indicates that the focus is distributing organisms faster than the clearing mechanism can take care of them.

With regard to Dr. Keefer's paper, I note first that his mortality figures seem to indicate that his cases were largely those treated before the recent advent of the sulfanilamide group of drugs. This applies particularly to the hemolytic streptococcus and the pneumococcus figures of 70 and 80 per cent, respectively. I believe that it is the experience of all of us that these two types of bacteremia have been considerably lowered by sulfanilamide and sulfapyridine, respectively, and more recently by sulfathiazole. I would like very much to know whether Dr. Keefer has any figures for those cases that were treated with these drugs.

With regard to the staphylococcal bacteremia, his figure of 82 per cent closely corresponds to our figure of 81.4 per cent previous to our use of staphylococcal bacteriophage. In our cases treated with bacteriophage our total mortality of the last six years has been reduced to 46 per cent, and in the last two years, using doubly potent bacteriophage made in our own laboratory, the figure has dropped to 28 per cent. I believe that in bacteriophage we have an effective agent that should be used in all staphylococcal septicemias. This may be further reduced by combining bacteriophage with sulfathiazole.

I would like to ask Dr. Keefer what he means by the breakdown of the local defense mechanism and how he demonstrates the antibodies in the blood of the patient. With all of the surgical organisms that produce septicemia we have little evidence that the body is able to build up any lasting immune substances or develop any lasting immunity except for the typhoid bacillus. In many cases we are not able to demonstrate any evidence of any agglutinins in the serum. For the same reason it seems to be difficult to develop artificially any potent immune serum in animals, either for the hemolytic streptococcus or the staphylococcus, and the clinical use of serums in these two types of infections have been, for the most part, disappointing. There has been some evidence recently, however, that rabbit serum may be prepared in such a way as to contain certain antibacterial antibodies against the staphylococcus. This, however, will have to be confirmed by larger clinical experience.

I appreciate the opportunity given me for discussing Dr. Keefer's paper, and I want to thank him for his presentation.

#### RITHER—WHITHER?

Smith: "So your son is in college? How is he making it?"  
 Doctor: "He isn't. I'm making it and he's spending it."—*Ill Med J*

#### AMERICAN HEART ASSOCIATION, INC

The seventeenth Scientific Meeting of the American Heart Association will be held May 30-31, 1941, at the Hotel Statler, Cleveland, Ohio.

# ILEOCOLOSTOMY WITH EXCLUSION IN THE TREATMENT OF REGIONAL ILEITIS

RALPH COLP, M D , and LEON GINZBURG, M D , New York City

THE efficacy of short-circuiting procedures in causing a recession of inflammatory lesions of the bowel has been known for years. Some of the earliest cases of intestinal granulomas reported in the literature were those in which the disappearance of supposedly inoperable neoplasms had occurred following such operations. With the recrudescence of interest in localized inflammatory lesions of the bowel in the past decade, it might be expected that this procedure would have recovered some of its original popularity. Perusal of the literature, however, indicates that the use of ileocolostomy with exclusion as a definitive therapeutic measure in the most common of such diseases, i.e., regional ileitis, is viewed with considerable reserve.<sup>1</sup> The most optimistic statements<sup>2</sup> concede a 50 per cent success with this method. The following communication is based upon a study of 22 cases of regional ileitis operated upon on the various services of the Mount Sinai Hospital. Most of these cases have been reported elsewhere in discussion of other phases of this disease. We have felt, however, that it would be valuable to study, as a group, those cases in which ileocolostomy with exclusion had been performed. It might be advisable to state that by the term "regional ileitis" we indicate those cases where the inflammatory disease is limited to the distal ileum. Cases in which both ileum and the right colon are involved are not considered in this group.

Before discussing our own experience with this procedure, it might perhaps be advisable to examine the objections voiced against it. In the first place, the point has been raised that unless resection is practiced the nature of the lesion remains unknown. This contention probably had a considerable degree of validity before the nature of regional ileitis was understood. As a result of the resections that were performed during that period, it became possible to correlate a mass of operative clinicopathologic and radiologic observations. Today, a sufficiently clear picture has emerged to permit of a clinical and operative diagnosis of the above condition with a high degree of accuracy.

A number of objections to the operation of ileocolostomy with exclusion have been predicated upon, supposedly disadvantageous mechanical and functional states supervening upon the operation *per se*. It has, for instance, been argued that the distal excluded end might "blow out" following transection of the ileum because of obstruction beyond it. The fear has also been expressed that the loop of excluded colon between the site of the lesion and the enterocolostomy might become distended and ulcerate as a result of retrograde passage of stool and resultant stasis. In a previous communication<sup>3</sup> we have reported clinicoradiologic and operative studies of 32 cases of various types upon whom ileocolostomy with exclusion had been performed. The conclusions drawn were:

- 1 Obstruction and dilatation of the distal excluded ileum do not occur.

- 2 Although there is retrograde passage of ileal contents into the excluded segment of colon, there is no abnormal distention, dilatation, or ulceration of this loop.

- 3 The operation of ileotransverse colostomy or ileosigmoidostomy with exclusion does not in itself produce symptoms. Recurrence of symptoms has been found due to recurrence of the disease proximal to the anastomosis when the original operation was undertaken for disease of the small intestine. In cases in which the operation was performed for the localized type of colitis, symptoms have been found to be due to either persistence of the disease in the excluded loop of colon or its extension distally.

A factor of real moment which has probably contributed materially to dissatisfaction with enterocolostomy is the fact that it has frequently been practiced in continuity without simultaneous division of the bowel distal to it. Without such a complete exclusion there is of necessity only partial diversion of the fecal stream, and optimal conditions for healing in the affected segment are, therefore, not obtained. If, in addition, fistulas, either internal or external, are present, these will continue to discharge intestinal contents. Furthermore, in the presence of even a partial obstruction distally, an accumulation of intestinal contents that had passed by the stoma might occur with the development of a distended loop be-

tween the stoma and the diseased bowel (Fig 2) Such a loop may itself be the cause of new and severe symptoms This possibility, which has been emphasized by Estes and Holm,<sup>1,2</sup> has been observed by us twice in the course of secondary operations

In the present communication we desire to report especially the effects of enterocolostomy with complete exclusion by division (Fig 1) upon regional ileitis In our experience the results following this procedure have been roughly on a par with those obtained after

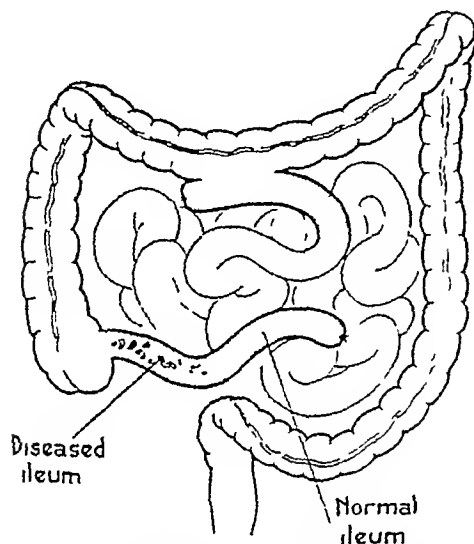


FIG 1 Ileocolostomy with exclusion by complete division of the bowel.

resection and have been accompanied by a lower mortality. In the 22 cases here reported this operation has been performed without a mortality While it is true that series of resections for regional ileitis with low mortalities have been reported, it should be noted that these reports are from large clinics with extensive material It is doubtful whether such results could be uniformly paralleled where no such opportunities for familiarity with the complex and varied gross pathologic anatomy of the disease is afforded Although many resections may be easily performed, the truly formidable difficulties encountered at times will almost certainly lead to disastrous experiences Ileocolostomy with exclusion is an indirect and much simpler procedure It obviates the necessity for widespread dissection with the attendant dangers of injury to adjacent, and often densely adherent, viscera It also reduces the likelihood of peritonitis from inadvertently breaking into encapsulated

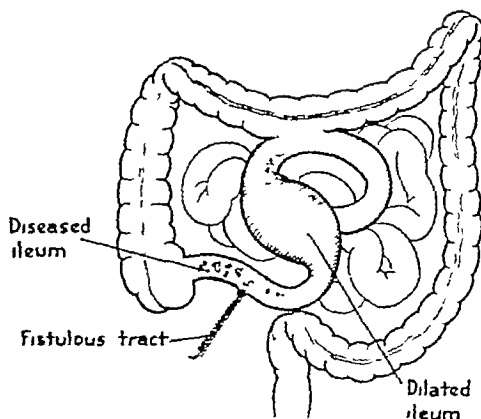


FIG 2 Ileocolostomy in continuity without exclusion. This figure indicates how intestinal contents will pass by the stoma and discharge through the fistula It also indicates the manner in which a dilated loop may form between the area of disease and the stoma

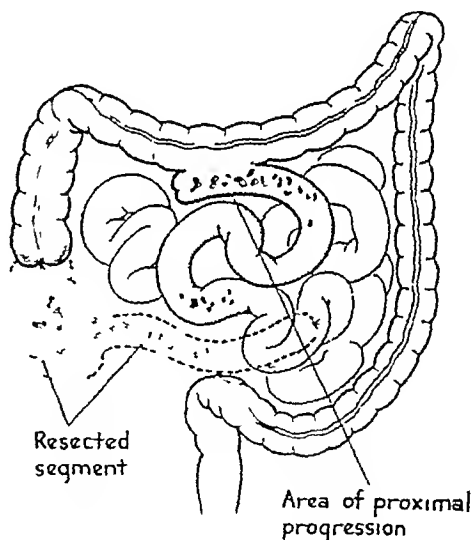


FIG 3 Indicates how fresh areas of disease may appear at the stoma and proximally or as a "skip lesion." As indicated such extension may occur either following resection or simple exclusion The area marked "Resected segment" corresponds to the segment which would be left excluded. The most proximal lesion is a "skip lesion."

purulent foci It can be carried out with a negligible mortality, even by surgeons who only rarely encounter this condition

Before discussing the effectiveness of the procedure under consideration, a certain confusion of thought and terminology should perhaps be clarified Symptoms following ex-

clusion may, in the first place, be due to failure of recession of the previously demonstrable pathologic process in the excluded loop of bowel distal to the anastomosis. Such a condition must be regarded as a persistence, or, if there has been a transient recession, a recurrence of the disease. On the other hand, recurrence of symptoms following either exclusion or resection may be due to the appearance of fresh areas of disease proximal to the site of such exclusion or resection, i.e., in bowel previously not demonstrably involved (Fig 3). In such a case it would probably be more correct to speak of proximal extension or progression of the disease. If exclusion is to rival resection as a definitive form of therapy, it must be shown that distal recession occurs in a high percentage of cases. In addition, it must be demonstrated that proximal progression occurs with no greater frequency in one than in the other. Incidentally, our own belief is that proximal extension depends on facts, *q v*, other than the type of operation undertaken for the cure of the originally demonstrable lesion.

#### A. Effect of the Excluded Diseased Distal Loop

For a short-circuiting procedure to be effective there must be an inherent tendency for healing of the intestinal lesion to occur. That such a tendency is present in regional ileitis is attested by the marked fibroplasia encountered even in early stages of the disease, a process that in the later stages gives rise to a marked hypertrophic, fibrotic, stenosing lesion. Such *a priori* hopes are in our opinion largely justified by the results obtained in this series. Of the 22 cases in which the operation was performed, we feel that 1 case should be excluded, as we would not perform this procedure in that type of case today. This patient (Case 7) had an ileosigmoidal fistula in which barium enema revealed a wide communication with the diseased small bowel. Following ileocolostomy with exclusion there was retrograde passage of stool from the sigmoid into the ileum. This stool was then discharged from an abdominal fistula. In this case the operation was a failure, and we believe that in cases where a large ileosigmoidal fistula is present enterocolostomy with exclusion cannot be depended upon to give a good result. In the remaining 21 cases a definite regression of the disease was observed in 19. Two cases were classified as failures, even though in these 2 there was marked improvement (Cases 1 and 2). In the first case

there was recurrence of intraperitoneal inflammatory signs and enlargement of an intra-abdominal mass which had never undergone complete recession. It is important to note that this patient had, nevertheless, gained over 40 pounds in weight and has lost her intestinal symptoms. In Case 2 there were periodic recurrent attacks of pain and fever followed by a mucoid discharge from a recurring abdominal fistula. It is worthy of note that neither of these cases manifested enteritis or obstructive symptoms. We wish to emphasize that the appearance of such symptoms should lead to a careful investigation of the bowel proximal to the anastomosis rather than to attributing them to persistence of the disease in the excluded loop.

In the remaining 19 cases where the results are classified as satisfactory, complete pathologic examination of the excluded loop was possible at a later date in 3 cases (Cases 3, 4, and 5). These showed definite gross and microscopic evidences of healing. In another case (Case 6) operative inspection of the excluded loop showed unquestionable evidence of healing in the bowel and mesentery and a spontaneous closure of previously existing fecal fistulas. In 15 other cases where no subsequent direct examination of the excluded bowel was made, the beneficial effects of the operative procedure as judged by the post-operative clinical course and follow-up were impressive.

(1) *Fever*—In patients who had been running a febrile course, sometimes over a prolonged period, there was a subsidence of such fever as a rule within two weeks.

(2) *Enteritic Symptoms*—Relief of severe enteritic symptoms was complete in many cases at the time of discharge from the hospital. In some patients it took a few months for the stool to become solid in character. This phenomenon has, however, also been encountered following resection with enterocolostomy. Persistence of severe enteritic symptoms or their recurrence after a free interval was found to be due to proximal extension of the disease in the 2 instances (Cases 4 and 6) in which it occurred. The fear that the excluded bowel might act as a reflex source of enteritic symptoms has not been confirmed in our experience.

(3) *Obstructive Symptoms*—These were invariably relieved by short-circuiting operations.

(4) *Fistulas*—In 5 out of 6 cases of abdominal fecal fistulas, purely ileal in origin, discharges ceased completely. In 1 instance (Case 2) intermittent mucoid discharges oc-

cluded. In 1 case (Case 7) where a large ileosigmoidal fistula communicated with an abdominal fecal fistula, the operation was a failure. As stated above, we do not think that the operation under discussion is indicated in such a case.

(6) *Intra-abdominal Masses*—In all but the case of persistent disease recorded above (Case 1), masses regressed both as to size and tenderness. In thin people a small residual mass without any pain or tenderness could at times be palpated even after all symptoms had disappeared.

(6) *Nutrition*—This was markedly improved except in such cases where proximal extension occurred. Some of the patients gained enormously in weight, gains of as much as 50 to 60 pounds being recorded.

## B The Relation of Proximal Extension or Progression of the Disease to the Type of Operation Performed

Before discussing this phase of the problem, certain of the pathologic peculiarities of regional ileitis should be emphasized. First, as is well known, so-called "skip areas" are frequently encountered in this disease. At times a few feet of such normal bowel may intervene between two definitely diseased segments. Unless thorough exploration, well proximal to the obviously diseased distal segment, is performed, the highest of these lesions may be overlooked. Recurrence of symptoms following failure to detect such an additional lesion must be charged to improper application of the operation performed, whether it be either exclusion or resection, rather than to the lack of efficacy of the procedure itself.

Another point worthy of note is that the degree of pathologic alteration in regional ileitis is not simultaneously uniform throughout the various affected segments of bowel. In the same case all gradations of disease, from the most advanced to the relatively minor, may be encountered. Continued experience has led us to suspect that at the time of operation disease may also be present in segments of bowel so minor in degree that they are simply not demonstrable clinically or operatively. Progression of such lesions, which are as a rule proximal to the main area of disease and, therefore, above the site of the division or resection, may, however, give rise to symptoms at a future date.

The theory has been advanced by some authors that such proximal progression of the disease is more likely to occur following exclusion than following resection.<sup>4</sup> The ex-

cluded loop of bowel is regarded as a focus from which there is extension of disease to more proximal segments of bowel by way of the mesenteric lymphatics. Certain observations would, however, appear to militate against this conception. In the first place, higher segments of bowel have later become diseased even when resection of all demonstrably diseased bowel and its accompanying mesentery was performed (Cases 4, 5, and 8). Thus, in 3 out of 13 resections performed at this institution, such involvement of proximal segments occurred. In addition, 2 cases where resection had been performed elsewhere appeared at this hospital with similar findings. Such proximal extension was noted only once in the present series in which the operation was limited to exclusion. This relative preponderance of the development of proximal disease following resection is probably purely fortuitous. On the other hand, a minor contributing factor may be the fact that when a simple exclusion is performed there is a greater tendency to place the anastomosis higher than if a segment of apparently normal bowel has to be resected.

That the condition of the excluded loop is not the determining factor in proximal progression is suggested by two other observations. First, in 1 case (Case 6) healing of an excluded loop with closure of fistulas was observed at a secondary operation, with an active lesion commencing 3 or 4 feet proximal to the site of division and anastomosis. Similarly, in another patient (Case 4) an excluded loop that was presumed to be the cause of recurrent symptoms was resected and found to present incontrovertible evidence of healing. At this operation, exploration of the stoma and bowel proximal to it revealed no evidence of involvement. At a still later date, however, disease became radiologically and operatively demonstrable in this proximal segment. Conversely, in 2 cases where anastomosis and exclusion failed to cause recession of disease, there was no evidence of the presence of fresh areas of involvement in higher segments.

The conclusion to be drawn, in our opinion, is that the important factor in preventing proximal progression is dependent upon choosing the segment high enough so that it will lie proximal to all potential diseased areas. Unfortunately, in our present state of knowledge it is impossible to determine accurately the site. It must also be noted that there are certain types of cases, fortunately relatively few, in which the disease extends so high in the bowel that all surgical therapy proves useless,

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(4) *Fistulas*—In 5 out of 6 cases of abdominal fecal fistulas, purely ileal in origin, discharges ceased completely. In 1 instance (Case 2) intermittent mucoid discharges oc-

were probably due to distention of the excluded loop and its evacuation via the fistula

*Case 3*—D D (Lewisohn<sup>2</sup>) was admitted to the hospital complaining of lower abdominal pain, especially after meals, for six weeks. X-ray revealed a lesion involving the terminal 8 inches of ileum. Operation revealed involvement of the terminal 6 to 8 inches by an inflammatory process presenting a typical picture of regional ileitis. The terminal ileum was divided between Payr's clamps about 18 inches from the ileocecal junction and an ileocolostomy performed. Four months later the patient was readmitted for a routine second-stage procedure. The lower abdominal pain had disappeared. She had occasional attacks of mild diarrhea, although as a rule she had two formed movements a day. Examination revealed that she was still quite anemic—hemoglobin 56 per cent—and a mass was still palpable in the ileocecal junction. A resection of the excluded segment was undertaken. The resected specimen showed scarring and evidence of healing in the region of the terminal ileum and cecum, with atrophy of the mucosa and chronic subserosal thickening.

The patient died following operation, death being found to be due to a subacute verrucose endocarditis. There was no further disease found in the intestine at autopsy.

*Comment.*—This was the first case in which definite pathologic evidence of healing in the excluded loop was found.

*Case 4*—G F was admitted in December, 1935, with a nine months' history of regional ileitis. Operation at that time revealed involvement of the distal 2 to 3 feet of ileum, a skip area of 1 foot, followed by another 18 inches of markedly diseased ileum. There was marked enlargement of the mesenteric glands and thickening and edema of the mesentery. Ileotransverse colostomy with exclusion was performed. Six months following the first operation she was readmitted, stating that she had been feeling comparatively well and had gained about 20 pounds in weight. She was, however, experiencing occasional attacks of cramplike lower abdominal pain. She was having three to four movements per day. It was assumed that the symptoms were due to the persistence of disease in the excluded loop of terminal ileum. Accordingly, about six months following the primary operation, a resection of the previously excluded small intestine was performed. At operation it was noted that the lesion presented an entirely different picture from the one described at the previous operation. The diseased portion of bowel was narrowed and atrophic and showed no evidence of inflammation. There had been considerable recession of the enlarged mesenteric lymph nodes. The pathologic examination of the resected specimen revealed atrophy of the

mucosa and fibrosis of the submucosa but no ulcerations. The gut wall did not appear indurated. (Up to this point the case had been reported by Lewisohn.<sup>2</sup>) Following this operation, the patient felt relieved for about eight months, when a recurrence of symptoms again necessitated admission to the hospital. At this time there was definite radiologic evidence of involvement of the loop of ileum entering into the ileocolostomy. Approximately fourteen months after the resection of the excluded segment, the patient was again operated upon. At this operation about 3 feet of the ileum proximal to the ileotransverse colostomy was found to be diseased and was resected together with the ascending and right transverse colon. The specimen revealed a typical picture of a cicatrizing ulcerative enteritis most marked at the stoma and disappearing at the proximal limit of resection. Following this operation, the patient again developed symptoms, and further study revealed still further extension of the disease higher in the bowel.

*Comment.*—It was assumed that the cause of the patient's symptoms was the presence of the excluded diseased ileum. As resection, however, showed incontrovertible evidence of healing, this belief cannot be sustained. It is more likely that the symptoms were due to the proximal extension which could not at that time be detected. It is important to note that, even though the excluded loop had healed, disease appeared in more proximal segments. It would be difficult to maintain that, under these conditions, extension was due to lymphatic spread from the excluded bowel. The persistent extension of the disease to higher levels of bowel to an extent as great as in this case simply means that this is one of those fortunately rare types of ileitis which, because of the degree of proximal extension, are really not suitable for surgical treatment.

*Case 5*—H. C., in 1928, had had an appendectomy and drainage for what was thought to be acute appendicitis. A large mass was found in the pelvis and right lower quadrant which was found to consist of cecum, appendix, terminal ileum, and mesentery of the small bowel. A loop of sigmoid was adherent. The mesentery of the terminal ileum was 2 inches thick and oozed pus. The appendix was removed and drainage was instituted. The report on the removed appendix was "acute and chronic inflammation." Eight months following operation the wound broke down and drained for two months. Two years later an abscess developed behind the scar. Drainage was followed by the development of a fecal fistula. Operation revealed a fistula running into the terminal ileum, which was thickened, indurated, edematous, and hyperplastic. The

for either exclusion or resection in these cases may leave such a relatively small area of functioning intestine that grave impairment of nutrition becomes inevitable. From this point of view the disposition of the distal originally diseased segment is a matter of only secondary importance.

The technic of the procedure has been discussed in a previous communication.<sup>6</sup> In short, the ileum is divided between Payr's clamps, both ends closed, and a side-to-side anastomosis with the transverse colon performed. When performing enterocolostomy, we do not embark upon an extensive exploration of the diseased segments, we simply explore enough to demonstrate the nature and the proximal extent of the disease. There are two possible mistakes that should be guarded against. One is making the anastomosis with the distal loop instead of the proximal, and the other is making the anastomosis at too high a level. In complicated cases both of these doubts may be resolved by tracing the bowel down from the duodenojejunal flexure.

## Case Reports

*Case 1*—R. K. was first admitted in July, 1935, with a two-and-one-half-year history of diarrhea with occasional blood at the end of defecation. A diagnosis of regional ileitis was made. Operation revealed an acute and chronic inflammatory process involving the terminal portion of the ileum, with omental adhesions in this vicinity. The ileum was divided about 1 foot from the ileocecal junction. Both ends were closed and an ileosigmoidostomy performed. For four years following operation patient did well. Gastrointestinal symptoms present prior to operation disappeared and she gained about 45 pounds in weight. Although there were no symptoms, a definite mass could still be felt in the right lower quadrant. (Up to this point the case has been previously reported by Lewisohn.<sup>7</sup>) In March, 1939, she appeared at the follow-up clinic complaining of pain in the right lower quadrant and fever. There were no gastrointestinal symptoms. Examination revealed a large tender mass in the right lower quadrant. Patient was readmitted to the service of Dr. Garlock and was reoperated upon. Acute and chronic inflammation of the excluded loop of bowel typical of regional ileitis was found, together with an abscess in the corresponding portion of bowel. The bowel proximal to the site of division showed no evidence of any disease.

*Comment*—This case represents a failure following enterocolostomy with exclusion in spite of the great improvement in the general condition. It is important to note that in spite of the persistence of disease in the ex-

cluded segment of bowel there was no new involvement of bowel proximal to the enterocolostomy. This would argue against the belief that proximal extension occurs via the lymphatics from the distally diseased bowel. It should also be noted that there were at no time any enteric symptoms. This case reinforces the contention that an explanation for the presence of such symptoms should be sought in disease proximal to the stoma rather than in the excluded loop.

*Case 2*—S. R. was first admitted to the Mount Sinai Hospital in 1927 with a history of an appendectomy having been performed eight years before. Following the operation she had irregular attacks of abdominal cramps, which increased in severity just prior to admission. During her stay in the hospital she ran a temperature between 100 and 103 F. Physical examination revealed a tender mass occupying most of the right lower quadrant. Operation at this time revealed a retroperitoneal abscess and an abscess in the ileocecal region. Terminal 6 inches of ileum were found greatly thickened and distorted with some dilatation proximal to the point. During the course of the dissection the bowel was injured, and a satisfactory closure could not be obtained. A profusely draining fecal fistula developed postoperatively. One and one-half months later, an ileocolostomy with exclusion was performed. Following this operation the temperature rapidly subsided and the fecal fistula rapidly closed. Only a mucoid discharge continued. The following year an extraperitoneal residual abscess was drained. She had no further symptoms until 1936 when an abscess in the abdominal wall was again drained. Following this there were occasional attacks of pain and fever, followed by the discharge of small quantities of mucus. In 1937 an ileocecal resection was performed. Two areas of stenosis were found, one about 10 cm. from the ileocecal junction and the other about 4 cm. from the ileocecal junction. There was a marked inflammatory infiltration in the involved mesentery. There was a fistula leading to the right lower quadrant. The proximal stricture was found to be quite marked and may have been the result of the operative injury mentioned above. The patient made an uneventful recovery and has been well since.

*Comment*—The persistence of the fistula and the recurrent attacks of pain and discharge were probably due to the fact that the two strictures present closed off the normal communication with the cecum so that the contents of the segment of excluded bowel were unable to empty into the cecum. This resulted in what was practically almost a bilateral closed loop. The recurrent attacks

fistulas and rectovaginal fistulas. At operation the patient was found to have regional ileitis involving the terminal 3 feet of bowel and an ileosigmoidal fistula. The diseased bowel was resected, and the sigmoidal opening was closed by suture. Following this operation, the patient did well, except that an attempt to close the rectovaginal fistula failed (Up to this time the patient has been reported by Lewisohn<sup>1</sup>). Approximately three years later she was readmitted to the hospital with the following history. For about a year before admission her stools had gradually increased in frequency until they were again 5 to 10 times a day. She had lost twenty pounds in weight. Reoperation at this time revealed a typical ileitis involving the anastomosis and bowel proximal to it. A resection of the diseased area was performed.

**Comment.**—It is interesting to note that the original resected specimen was 76 cm in length. The proximal 20 cm appeared quite normal followed by an abrupt onset of disease at that point. From this it would appear that the bowel was divided well into what was, at that time, apparently healthy looking tissue. In spite of the fact that adequate resection into healthy bowel was performed, fresh areas of disease later appeared.

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Dr Crohn states that in his experience only half of the short-circuiting operations are attended with success, the other half requiring later resections with a necessarily greater risk.

He does not state that those patients who had short-circuiting operations also had exclusion of the distal ileum, and no doubt many of them had only short-circuiting.

I have reviewed the records of 27 patients (16 men, 11 women) who were admitted to the Post-Graduate Hospital during the past eight years and who were found to be suffering from regional ileitis. The oldest was 62, and the youngest was 2. The average age was 29.

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affected segment was resected. The pathologic report was "hyperplastic granuloma of the terminal ileum with fistula formation." Following this operation, the patient was well for five years, when there was a recurrence of abdominal cramps and diarrhea. X-ray revealed an area of diseased ileum, commencing at the ileocolic stoma and extending proximally for 18 inches. At this time the bowel was divided proximal to the fresh area of disease, and an ileosigmoidostomy was performed without resecting the involved segment. Following this operation, the patient did extremely well. Two and one-half years later the patient was admitted to the hospital in a moribund condition from an intestinal obstruction due to a strangulating band. A postmortem was obtained. At this time 52 cm. of excluded ileal segment was found anastomosed with the transverse colon. The proximal half of this excluded loop appeared normal. The remaining two-thirds of the mucosa was smooth and atrophic and had longitudinal scars, especially at the mesenteric attachment, and one small wartlike polyp. The attached mesentery was slightly thickened. The site of the ileosigmoidostomy was normal, and there were no evidences of any enteritis in any of the proximal segments.

**Comment**—In spite of the fact that this patient had a primary resection of all evidently involved bowel, a fresh area of disease appeared at the site of anastomosis and proximal to it. This area of proximal involvement was cured by a secondary short-circuiting anastomosis. Autopsy revealed no further evidence of disease. In this patient the extension of the disease occurred in continuity. Apparently the bowel was transected too close to the diseased area at the first operation. Had the original transection been performed at a level 2 feet higher, there would not, in all likelihood, have been a recurrence of symptoms.

**Case 6**—S K. had had an operation performed at another institution in February, 1930, for what was thought to be an appendix abscess. An abscess was found in the mesentery of the ileocecal region and was thought to be tuberculous. The appendix was removed but showed neither evidence of tuberculosis nor evidence of acute inflammation. Postoperatively he developed a fistula, which was repaired ten months later. The fistula commenced to discharge again shortly thereafter. He was admitted to the Mount Sinai Hospital in 1931 with persistent fecal fistulas and a history of cramps, fever, diarrhea, and loss of weight. Lipiodol revealed two tracts, one going into the cecum and the other going into the terminal ileum with perileal accumulation. Operation revealed a large inflammatory mass involving the region of the terminal ileum and cecum. Ileocolostomy with

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**Comment**—This case illustrates the fact that active disease may exist proximally, although the excluded bowel has undergone healing. It also illustrates that extension is not necessarily in continuity. This patient was operated upon when the significance of regional ileitis was first being recognized. In all likelihood this lesion was overlooked at the original operation, because at that time there was insufficient knowledge of the so-called "skip area" of disease.

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Intussusception	2
Tumor of colon	1
Ileitis	4
Irritable colon	1
Fecal fistula	4
Intestinal obstruction	3
Appendiceal abscess	1
Twisted ovarian cyst	1

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The man was placed on the operating table, lightly narcotized, and the necessary instruments were prepared. A young army doctor tried to loosen the bullet from the bone and he was just about to grip it with his instrument to pull it out when suddenly it disappeared. It had lost its hold and had slipped back into the shot canal, which was still open, and stuck somewhere in the brain, which only the day before it had penetrated like lightning and without doing damage.

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## PHYSICAL EXAMINATION OF SCHOOL PERSONNEL

ELMER HARRISON ORMSBY, M D , Amsterdam, New York

A LITTLE oftener from year to year there appear, in our medical and health literature, reports concerning physical examinations of school personnel, so that more and more we are being brought to realize what the actual physical state of this group is and what bearing it has on health education and school economy. These reports are for the most part widespread, showing that no part of the country can actually claim a monopoly on this type of work and that there is a sporadic interest in it throughout the country. Our own State of New York has always shown a desire to assume leadership in every health activity, and so I believe we will soon be found in the forefront of this comparatively new and most important activity for the advancement of health education and the improvement of economic efficiency. With this thought in mind I am here recording the procedure employed locally to bring about such an examination and am appending some of the results obtained therefrom.

It has always been my belief that much more definite and lasting progress can be obtained by education than by legislation. The latter, however, can be a useful lever to interest those concerned with the topic at hand and at least create a feeling that some definite and tangible objection must be raised if opposition is to be successful. Section 575, Article 20-A, of the education law states "Such medical inspectors may make such examinations of teachers, janitors, and school buildings as in their opinion the health of the pupils and teachers may require." This became law in 1913 and in my opinion should be ample authority on which to proceed. This opinion is also shared by some members of the legal profession who have given the subject special study. However, the State Department of Education does not wholly share this belief and feels that in order to enforce physical examinations of teachers on tenure the law should be both strengthened and clarified. There was some effort in this direction at the 1939 session of the legislature but it failed to change the law. In May, 1940, at a meeting in Schenectady of the school trustees of half-

a-dozen surrounding counties, there was a unanimous show of hands favoring a change in the present school medical inspection law to make physical examinations of teachers compulsory. The Medical Society of the County of Westchester is also on record as favoring compulsory physical examination of teachers. It is my belief that if effort is continued in this direction the law will eventually be changed. Whatever the outcome may be, I cannot too strongly urge upon physicians the necessity for continued education as to the real value to the recipient of an annual physical examination. Also, care should be exercised so that such examinations are not used for so-called fishing expeditions to gather evidence against a teacher who for some other reason may be *persona non grata* with his or her employer.

Since 1919 when I entered upon my present position I have been striving for an opportunity to make physical examinations on all employees of the Board of Education. The superintendent at that time replied to me when I suggested such a procedure "If you take good care of the children that will be about all you will have time for, and the teachers can look after themselves." When a new superintendent arrived some years later, I talked it over with him but without any change being made in the *status quo*. From time to time I renewed my request for his assistance, not wishing to rely on the law alone, but with no better success. Fifteen years passed, during which time at least one or two of my fellow practitioners occupied places on the Board, but I was unable to get them to introduce and pass local legislation for this purpose. Then a dentist was elected to membership on the Board, and I immediately contacted him and found he was receptive to it. He was unable to get the legislation passed until more recently when we had another change in superintendents and found this one sympathetic to us.

The first resolution passed permitted all teachers to employ their own physicians. This was tried for one year but with poor results. The contracts for teaching the ensuing year were sent out on Friday with a note that they must be returned on Monday accompanied by a certificate of physical fitness to teach issued by a physician. So the teachers

Read before the joint meeting of the New York State Association of School Physicians and the New York State School Nurse-Teacher Association at Saratoga Springs New York June 24, 1940

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Acute appendicitis	10
Intussusception	2
Tumor of colon	1
Ileitis	4
Irritable colon	1
Fecal fistula	4
Intestinal obstruction	3
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Twisted ovarian cyst	1

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Next we came across a case of mental derangement in one of our younger teachers whose mother had committed suicide during the menopause. The teacher immediately entered a sanatorium for treatment and after several months returned much improved. She is now residing with one of our health teachers and is thus under constant observation. We found 2 cases of hyperthyroidism, 1 of whom was immediately operated upon and has made an uneventful recovery. She is grateful to us for the examination. The other is under medical treatment and has shown marked improvement. We found a case of trifacial neuralgia, and she is now under treatment. We found a case of lateral nystagmus and referred her to an eye man. We found a case of breast tumor, and she is now under constant observation. We found 5 cases of defective hearing and referred them all to an ear specialist. Two are now under treatment, and we are advised that the other 3 can expect no further improvement in their hearing. We found a patient with arthritis deformans of ten years' standing who is constantly under treatment but with a poor prognosis. Two cases of cardiac lesions with imperfect compensation were found. One has now improved under treatment, and the other is dead. Ten teachers had bad teeth. As mentioned before, 21 acknowledge having

hemorrhoids, and probably there are others about whom we do not know, 159 wear glasses, and 2 of these have a vision of 20/40 or worse in the better eye after correction. There is only 1 teacher who acknowledges having foot trouble, but there are a number of others whose arches cannot be said to be anatomically normal.

We found that 304 had been successfully vaccinated, 17 unsuccessfully vaccinated, and 4 never vaccinated against smallpox. Four are Schick-negative to diphtheria, and 46 have had toxin-antitoxin or toxoid, 54 have received typhoid prophylaxis.

I was very much interested in weight and blood pressure and the relationship of one to the other. Of the 325 teachers examined, 180 or 56 per cent were of normal weight. Of these, 43 or about 24 per cent had high blood pressure. Sixty-seven or 20½ per cent were more than 10 per cent overweight, and, of these, 43 or 64 per cent had high blood pressure. Seventy-eight or 23½ per cent were more than 10 per cent underweight, and, of these, 7 or 11 per cent had high blood pressure. Now let us see how this looks by age groups. In the age group 21 to 30 there were 80 teachers. Of these, 9 or 11 per cent had high blood pressure, and, of the 9, 5 or 55½ per cent are overweight. In the age group 31 to 40 there are 115 teachers. Of these, 23 or 20 per cent have high blood pressure and, of the 23, 15 or 65 per cent are overweight. In the age group 41 to 50 there are 85 teachers. Of these, 33 or 39 per cent have high blood pressure and, of the 33, 18 or 54½ per cent are overweight. In the age group 51 to 60 there are 36 teachers, 14 or 40 per cent of whom have high blood pressure. Of the 14, 5 or 35¾ per cent are overweight. In the last age group, 61 to 70, there are 9 teachers, and, of the 9, 5 or 55½ per cent have high blood pressure. However, none of these are overweight. My interpretation of high blood pressure has been arbitrarily fixed at systolic 140 or above. Now let us have a look at low blood pressure. Under this heading I have included all teachers with a systolic of 110 or lower and I find I have three groups as follows: 77 teachers with 110 by 70, 15 with 100 by 50, and 1 with 90 by 50 for a total of 93 teachers with low blood pressure. Of these, 18 or 20 per cent are underweight and 13 or about 14 per cent are overweight. It seems to me that these underweights should maintain their resistance at par, for it is in this group that the opportunity exists for the development of such infections as pulmonary tuberculosis. Those

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They extended over a period of three months—March, April, and May, 1939. The total number examined was 370. Of these, 325 were teachers (45 men, 280 women), 31 were janitors, and 14 were other employees. A complete history was taken, followed by a complete physical examination except rectal and bimanual. Each person examined had an x-ray of the chest. No urinary examinations, blood examinations, basal metabolic determinations, or electrocardiographs were done except in special instances where dismissal for physical disability was considered.

What things interested me most as a result of these physical examinations were (1) the detection of communicable disease and its subsequent eradication for the protection of the students, (2) the learning of what sort of care a group of professional people such as schoolteachers take of themselves, and (3) learning whether their physical condition was such as to justify their continued employment.

Histories revealed the presence of asthma in 2 cases, diabetes, 3 cases, old cerebral accident, 1 case, hemorrhoids, 21 cases,

and the following operations: bilateral mastectomy for cancer in 2 cases and unilateral mastectomy for cancer or precancerous lesions in 10 cases. All of these have successfully passed through the five-year waiting period without recurrence except 2, and they are still safe. Other operations were: tonsillectomy, 135, appendectomy, 55, nasal operations, 19, hysterectomy, 13, herniotomy, 12, hemorrhoidectomy, 11, thyroidectomy, 7, cholecystectomy, 4, oophorectomy, 3, mastoidectomy, 1, fistula-in-ano 1, amputation of cervix, 1, posterior gastroenterostomy, 1, cesarian section, 1.

X-ray revealed the presence of 2 active and 5 healed cases of pulmonary tuberculosis.

Physical examination revealed the fact that 2 janitors had active pulmonary tuberculosis, moderately advanced. Both immediately went to the sanatorium for treatment. One was there four months and was then discharged as being arrested. The other was there eight months before becoming arrested. This patient had a lung collapse following which the sputum promptly became negative. Both are now back at part-time work, but neither is in a position where he comes directly in contact with the students. I consider the discovery of these cases timely indeed, as one always wonders just how many contacts become afflicted with the disease. The contacts here are those persons who are at an age when tuberculosis thrives best. The problem of rehabilitation is a serious one. Should these patients ever again be allowed to come in contact with students? Should they ever again be allowed to sweep floors, shovel coal, or snow? My answer would be, "No."

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hemorrhoids, and probably there are others about whom we do not know, 159 wear glasses, and 2 of these have a vision of 20/40 or worse in the better eye after correction. There is only 1 teacher who acknowledges having foot trouble, but there are a number of others whose arches cannot be said to be anatomically normal.

We found that 304 had been successfully vaccinated, 17 unsuccessfully vaccinated, and 4 never vaccinated against smallpox. Four are Schick-negative to diphtheria, and 46 have had toxin-antitoxin or toxoid, 54 have received typhoid prophylaxis.

I was very much interested in weight and blood pressure and the relationship of one to the other. Of the 325 teachers examined, 180 or 56 per cent were of normal weight. Of these, 43 or about 24 per cent had high blood pressure. Sixty-seven or 20½ per cent were more than 10 per cent overweight, and, of these, 43 or 64 per cent had high blood pressure. Seventy-eight or 23½ per cent were more than 10 per cent underweight, and, of these, 7 or 11 per cent had high blood pressure. Now let us see how this looks by age groups. In the age group 21 to 30 there were 80 teachers. Of these, 9 or 11 per cent had high blood pressure, and, of the 9, 5 or 55½ per cent are overweight. In the age group 31 to 40 there are 115 teachers. Of these, 23 or 20 per cent have high blood pressure and, of the 23, 15 or 65 per cent are overweight. In the age group 41 to 50 there are 85 teachers. Of these, 33 or 39 per cent have high blood pressure and, of the 33, 18 or 54½ per cent are overweight. In the age group 51 to 60 there are 36 teachers, 14 or 40 per cent of whom have high blood pressure. Of the 14, 5 or 35¼ per cent are overweight. In the last age group, 61 to 70, there are 9 teachers, and, of the 9, 5 or 55½ per cent have high blood pressure. However, none of these are overweight. My interpretation of high blood pressure has been arbitrarily fixed at systolic 140 or above. Now let us have a look at low blood pressure. Under this heading I have included all teachers with a systolic of 110 or lower and I find I have three groups as follows: 77 teachers with 110 by 70, 15 with 100 by 50, and 1 with 90 by 50 for a total of 93 teachers with low blood pressure. Of these, 18 or 20 per cent are underweight and 13 or about 14 per cent are overweight. It seems to me that these underweights should maintain their resistance at par, for it is in this group that the opportunity exists for the development of such infections as pulmonary tuberculosis. Those

who have low blood pressure but are overweight should have their endocrine glands checked

Thus, it can be seen from this rather brief summary of this particular group that physically and mentally we are not exempt from the usual vicissitudes of life because we happen to be associated with a school system, that we should ever be on the alert to protect the

health of those whose physical and mental welfare is committed to our charge and keeping, and that to perform our various duties thoroughly we should constantly take inventory of ourselves, both physically and mentally, to guard against all pathologic encroachments upon our anatomic and physiologic well-being

37 Church Street

### DOCTORS GIVE \$1,000,000 A DAY

An editorial that has appeared in half a dozen upstate newspapers shows that people are not blind to the tremendous service the profession is giving them with an open hand. It is entitled "Medicine for the Needy," and runs

"One serious charge made against the medical profession is that the cost of its service puts it out of reach of a considerable proportion of the American people

"That charge has been thoroughly investigated and found to be largely baseless. The Bureau of Medical Economics of the American Medical Association has made an exhaustive study and found that there are few persons in this country desiring medical aid who are unable to obtain it. When queried, the mayors of a hundred typical cities of all population brackets testified that there was no neglect of the poor because of their inability to pay

"Anyone who has seen the medical profession in action knows the truth of this. The average doctor can give but part of his day to the care of patients who pay him. Many hours in each

week are given to charitable work in hospitals, homes, and institutions, treating the indigent whom he knows will never be able to meet a bill.

"The great majority of doctors base their charges on the ability to pay—and those who can pay nothing are given the same scrupulous treatment as the wealthiest patient

"It is reliably estimated that the doctors of this country give at least \$1,000,000 a day worth of free service to the sick. That comes to \$365,000,000 a year—a munificent contribution indeed to the cause of public health. The old saying that 'time is money' is particularly applicable to the doctor—and he gives it generously to the needy

"The fact that the general standard of health in this country is far above that of the rest of the world is the best possible commentary on the quality and extent of American medical service. No man or woman, no matter how meager his resources, need lack expert attention in time of accident or illness"

### MEDICAL CARE FOR MIGRANT WORKERS

The California-Arizona plan of medical care for migrants has worked so well that it is being extended to the Pacific Northwest, Texas, and Florida. C B Baldwin, farm security administrator, says in his annual report to Congress, we are told in *California and Western Medicine*

After explaining that the influx of migrants into California and Arizona created a serious public health problem, the report told how the Agricultural Workers' Health and Medical Association was formed in 1938 by FSA with the cooperation of the California Medical Association, the State Department of Health, and the State Relief Administration.

"Migrants make application for medical treatment at the Association's district offices or camp treatment centers," says the report

"A certificate of membership in the Health Association, which serves as an identification

card, is issued to the applicant, who selects his physician from a list of participating doctors

"The Agricultural Workers' Health and Medical Association is billed for the medical or hospital services rendered. In many treatment centers, local physicians work in the clinics at designated hours on alternate days

"Although the migrant workers are obligated to repay the cost of services 'if so requested,' their low income makes repayment impossible in most cases. Some workers, however, have been able to repay a few dollars

"In view of the health protection provided for the two states under this program, it seems probable that public financial support will continue.

At present there are thirteen medical care centers in California, seven in Arizona, four in Texas, and two in Florida

# Case Report

## PULMONARY ATELECTASIS DUE TO ASPIRATION OF BLOOD FOLLOWING FACE TRAUMA

EDWARD S. VAN DUYN, M.D., and JOHN VAN DUYN, M.D., Syracuse, New York

ON October 5, 1938, at 9:00 A.M., S.M., a railroad employee, aged 50, was found lying unconscious beside the tracks seven miles outside of the city. Presumably he had been struck by the train that passed through an hour before. The patient remembered nothing of the accident. He was taken by ambulance to St. Joseph Hospital where he was first seen by us about two hours after the injury.

On arrival at the hospital the patient was found disoriented though no longer unconscious. He was restless and groaned at intervals but was not in severe shock. There was a deep laceration of the left cheek, 5 to 6 cm. long, penetrating to the maxillary bone above and into the oral cavity below. The left malar bone was fractured in at least two places, and marked ecchymosis and swelling were present about the left eye. The roof of the mouth and the pharynx were coated with dried blood.

Examination of the chest revealed tenderness on the left side anteriorly in the region of the second and third ribs. There was impaired resonance at the right base posteriorly, and the right lower and middle lobes were loaded with coarse bubbling rales. The heart was not displaced. The left side of the chest was clear.

There was a simple fracture of the left clavicle with overriding of fragments, but because of the patient's serious condition no immediate effort was made at reduction. The face laceration was sutured and a drain inserted. The blood that had collected in the mouth and pharynx was swabbed out.

By the next morning the patient's condition had become obviously critical. He was unresponsive and tossed continuously about the bed, mumbling incoherently. The breathing was rapid and labored, and cyanosis was marked. Examination of the chest revealed dullness on the right side posteriorly from the base nearly to the apex, with almost no breath sounds audible. X-ray examination showed the right lung field almost entirely opaque, showed fractures of the left second, third, and fourth ribs, and confirmed the clavicular fracture.

A diagnosis of atelectasis of the right lung due to aspiration of blood into the right bronchus was made, and a bronchoscopic examination was advised. This was performed at 1:30 P.M. by Dr. Gordon D. Hoople, of Syracuse. The operative note reads as follows: "Much thick yellowish-red secretion was seen in the right main bronchus. This was suctioned till the larger passages were clear. Approximately three to four ounces of material were removed. Air was heard in the right lung immediately afterward."

Following bronchoscopic aspiration, the patient's improvement was remarkable. The respirations almost at once became slower and deeper, the cyanosis disappeared and the restlessness ceased. Postoperative x-ray examination showed a considerable increase in air in the right lung field. The patient was placed in an oxygen tent, and by the following morning the temperature had fallen from a prebronchoscopic level of 101.8 to 99 F., and the respirations from 40 to 20 per minute.

This rapid and marked improvement, however, proved to be only temporary. Within twenty-four hours the restlessness, disorientation, labored breathing, and cyanosis began to reappear, and, by the third day after bronchoscopy, the aspiration signs of atelectasis were again present. This time, however, the right upper lobe was involved. X-ray examination confirmed this impression, showing opacity of the right upper lung field and displacement of the trachea to the right.

Bronchoscopic examination was again performed a few hours later, and a chunk of tenacious mucus was found completely blocking the right upper bronchus. The plug was removed with considerable difficulty, but, once accomplished, the same spectacular results followed as on the previous occasion. X-ray examination done some twelve hours after the aspiration showed clearing of the involved lung field. A final plate taken two days later showed further clearing of the right upper lobe to a nearly normal extent.

Following the second bronchoscopic treatment, convalescence progressed steadily, though the patient was not clear mentally until three weeks later and was not in condition to leave the hospital until three weeks after that, six weeks in all after admission to the hospital.

The progress in this case after leaving the hospital is also of interest, because a second series of bronchoscopic aspirations was found necessary in order to clear up the persistent pulmonary symptoms. During the few months after leaving the hospital the patient was up and about, but he did not fully regain his lost weight or strength. A productive cough developed, yielding from 2 to 4 ounces daily of a fairly thick, yellow, odorless sputum. Postural drainage brought no relief, and, five months after discharge from the hospital, bronchoscopic examination was again resorted to.

At the first examination a quantity of thick, purulent, blood-streaked secretion was found in the right main bronchus, the lining of which appeared definitely inflamed. X-ray studies, following lipiodol injection and done at this time, revealed no evidence of bronchiectasis.

Three bronchoscopic examinations in all were performed at approximately two-week intervals,

and on each occasion considerable secretion was aspirated from the right main bronchus. At the final aspiration on June 7, 1939, the lining membrane of the bronchus was noted as showing definitely less evidence of irritation.

Following this series of bronchoscopic treatments, the patient began to show general improvement again, and during the next few months the chest cleared, weight increased to nearly normal, and the cough and expectoration almost entirely disappeared. By the end of the summer his only cause of disability was a weakness in the left arm due to poor union at the site of the clavicular fracture.

### Comment

In a review of the literature we were unable to find another instance reported in which trauma to the face was followed by the aspiration of blood into a bronchus and pulmonary atelectasis. We believe, however, that this is probably not actually so rare an occurrence, since all that may be necessary to fulfill the conditions are tem-

porary unconsciousness and a bleeding wound that penetrates into the oral or nasal cavity.

It is also interesting that a postoperative massive atelectasis due to the classic mucous plug in the bronchus should have been a complication in a case of atelectasis due to drowning of the lung.

### Conclusions

In any case of face or head injury where the patient has been unconscious and blood is found in the oral cavity or pharynx, the possibility of the aspiration of blood into the tracheobronchial tree should always be considered. If pulmonary atelectasis is present, the prompt removal of the blood through a bronchoscope may prove to be a lifesaving measure.

The aftercare in such a case may be prolonged because of a productive cough. This is apparently due to a persistence of irritation of the bronchial mucous membrane from the previously aspirated blood and may require further bronchoscopic treatments.

## REFILLED PRESCRIPTIONS

Few physicians realize, perhaps, how many of their prescriptions are refilled over and over and passed around from hand to hand, to Uncle John, Aunt Kate, Cousin Charlie, and heaven knows who else. Dr. Allen D. Rebo, of Scott, Arkansas, writes to the *Medical World* that the December issue of a house-organ widely distributed among the country's pharmacists\* quotes excerpts from a number of the magazine's readers telling of physicians' prescriptions that have been refilled many times. Some of the figures given are almost startling.

These figures may contain some lesson for physicians, at least, they should prove interesting.

A Palestine, Texas, druggist began the furore by telling of a prescription that had been refilled 150 times—and by asking if the "record" had been topped elsewhere. It seems it has been—and how!

A Kansas City, Missouri, pharmacist hastened to report on a prescription his store had refilled 198 times, and, he adds, "we have several others that I am sure will come close to his 150 mark, but why look them up when he is already beaten?"

Why, indeed!

Another "Texan wonder" is from the town of

Mission, with a refill record of 162, but that one is topped in the same paragraph by a Grand Junction, Colorado, "prescription specialist," as he describes himself, who boasts of 252 refills of one prescription.

However, even the startling figure, 252, cannot long hold the center of the stage. From St. Paul, Minnesota, comes the topper of them all—at least for the December issue—and if following issues show this gentleman to have been bested, the final champion will have attained an amazing record indeed. For the St. Paul druggist sends the editor a prescription that his firm had refilled 665 times!

The St. Paul temporary champ failed to enclose his photo also, but an Atlanta, Georgia, pharmacist seems more aware of present-day publicity routine. His photo is taken showing him, the prescription department of his store as a background, busy refilling a prescription "for the 315th consecutive time." We're further enlightened with the information given in the caption beneath the picture that "the prescription contained zinc sulfate, boric acid, and aqua."

The Atlanta pharmacist whose picture graced the page should not feel chagrined at having failed to achieve first place in the remarkable contest, the winner of second place, in such a stiff race, deserves a place among the immortals.

\* *Modern Pharmacy* Dec. 1940, P. D. & Co.

## THE LITTLE AND THE MUCH

"One small bit of information brought to light by the research laboratory may eventually prove to be worth many millions of dollars and save untold suffering."

—Basil O'Connor, president, *The National Foundation for Infantile Paralysis*

## MEDICAL OFFICERS WANTED

A call is sent out for senior medical officers at \$4,600 a year, medical officers at \$3,800, and associate medical officers at \$3,200, to serve in various government departments. Applications are to be filed with the U. S. Civil Service Commission, Washington, D. C.

# Therapeutics

## CONFERENCES ON THERAPY

THESE are stenographic reports, slightly edited, of conferences by the members of the Departments of Pharmacology and of Medicine of Cornell University Medical College and the New York Hospital, with collaboration of other departments and institutions. The questions and discussions involved participation by members of the staff of the college and hospital, students, and visitors. The next report will appear in the June 1 issue and will concern "The Uses of Adrenal Cortical Hormones."

### The Sulfonamide Drugs

DR. CLAUDE E. FORENER Dr Plummer is going to talk to us first on the sulfonamide drugs and their clinical application.

DR. NORMAN PLUMMER The development of sulfonamide therapy represents one of the most dramatic and most successful achievements in medicine. The chemistry of the sulfonamide drugs evolved slowly at the beginning. The first of these drugs was synthesized as early as 1908. However, it was not until about 1930 that the azo dye containing sulfonamide, "prontosil," was discovered. In February, 1935, Domagk's epoch-making paper appeared, which demonstrated the protective value of prontosil against experimental streptococcal and staphylococcal infections. Although the German literature already included a few minor clinical reports on the use of the sulfonamide dyes, Domagk's contribution represents the real beginning of this treatment.

In the United States the sulfonamide drugs were first used clinically in 1935, but it was not until 1936, about four years ago, that extensive clinical and experimental studies were started. Both prontosil and prontosil were tried, and in 1937 the name sulfanilamide was accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in *New and Nonofficial Remedies* (Table 1).

TABLE 1 —SULFONAMIDE DRUGS

Prontosil	Sodium sulfathiazole
Sulfanilamide (prontosil)	Sulfamethylthiazole*
Neoprontosil	Sulfadiazine*
Sulfapyridine	Sodium sulfadiazine*
(Dagenan, M & B 693)	Sulfaguanidine*
Sodium sulfapyridine	Dodecanoyl sulfanilamide*
Sulfathiazole	

\* These drugs are under investigation.

Since 1936, in this country sulfanilamide has been given trial in about every infectious disease. The results have been satisfactory in infections caused by the hemolytic strepto-

coccus, the gonococcus, and the meningococcus, in certain of the urinary tract infections, and in chancroid. Because of the disappointing results in the pneumococcal, staphylococcal, and certain other infections, attempts were quickly made to discover related chemicals that might also be useful in these infections. In May, 1938, Whitby reported excellent results in experimental pneumococcal infections with the pyridine analogue of sulfanilamide. By the fall of 1938 this preparation, in this country called sulfapyridine, was producing remarkable recoveries in pneumonia and other pneumococcal infections. At the same time it appeared to have about the same value as sulfanilamide in hemolytic streptococcal, gonococcal, and meningococcal diseases. However, it had little effect on infections caused by the staphylococcus and *Streptococcus viridans*. Because of this and the extreme gastric irritation caused by sulfapyridine, the search was continued for another derivative.

Forsbinder and Walter synthesized the thiazole analogue just a little over a year ago, and this drug, named sulfathiazole, has now received considerable clinical and experimental study. Sulfathiazole produces much less nausea and vomiting, although the other toxic reactions are about the same as for sulfapyridine. It has a slightly wider scope of action in that it shows greater protective value against experimental staphylococcus. However, it has not as yet been decided whether sulfathiazole has the same high protective value as sulfapyridine against the pneumococcus.

Sulfadiazine, which is the pyrimidine derivative of sulfanilamide, is one of the last of these drugs to receive attention. This drug was synthesized by Roblin, Williams, Winnek, and English and used experimentally by Feinstein, Williams, Wolff, Huntington, and

Crossley These experimental studies indicate that sulfadiazine is at least equal to sulfanilamide against hemolytic streptococcal infections and equal to sulfapyridine or sulfathiazole against pneumococcal and staphylococcal infections. In addition, it produces a high degree of protection in experimental infections due to Friedländer's bacillus. In animals it has the further advantage of being more rapidly and more uniformly absorbed, of giving higher blood concentrations, and of being less toxic.

Dr Ensworth and I have just reported our absorption and excretion studies in the human, and these are comparable to the results in experimental animals. Furthermore, at Bellevue and the New York Hospital we have administered the drug to about 150 patients. In a small series of pneumococcal pneumonias, the clinical results compare favorably with those obtained with sulfapyridine and sulfathiazole. In certain other infections, particularly those due to the Friedländer's bacillus, the results are encouraging. The most remarkable finding in our clinical experience with sulfadiazine is that almost no nausea and vomiting follows its administration. In our series there have been 4 cases of toxicity—3 with skin eruptions and 1 with hematuria. However, the number of cases observed is still too small to make any comparison of the less common and more serious reactions, and, furthermore, we have not as yet ruled out the possibility of a reaction such as the peripheral neuropathy which occasionally follows sulfamethylthiazole administration (Table 2).

With the increasing number of sulfonamide drugs available, it has become more difficult to make the correct choice for a particular infection. In general practice that problem is considerably simplified, because only sulfanilamide, neoprontosil (which is absorbed as sulfanilamide), sulfapyridine, sodium sulfapyridine, and sulfathiazole\* have been accepted for general use. Sulfanilamide has received the most extensive trial, is more rapidly absorbed and eliminated, and does not form concretions in the urinary tract. For these reasons sulfanilamide should be used in infections due to the *Streptococcus hemolyticus*, *meningococcus*, and *gonococcus* until it has been proved that one of the other drugs has a greater value in these conditions.

Either sulfapyridine or sulfathiazole may be used in pneumococcal infections. Because there is less gastric irritation, sulfathiazole may be used in the milder cases, but sulfa-

TABLE 2—THE COMPARATIVE CLINICAL VALUE OF SULFANILAMIDE, SULFAPYRIDINE, AND SULFATHIAZOLE

Disease	Sulfanilamide	Sulfapyridine	Sulfathiazole
Hemolytic streptococcal infections	++++	+++	+++
Pneumococcal infections	+	++++	+++
Meningococcal infections	++++	++++	++
Gonococcal infections	++++	++++	++++
Staphylococcal infections	+	++	+++
Streptococcus viridans infections	++	++	++
Virus diseases			
Lymphogranuloma inguinale	++	++	++
Common cold	0	0	0
Influenza	0	0	0
Poliomyelitis	0	0	0
Smallpox	0	0	0
Urinary tract infections			
E. coli	++++	++	++
A. aerogenes	++	++	++
B. pyocyaneus	+	+	+
B. proteus	++++	+	+
Enterococcus	0	0	0
Staphylococcus	++	++	++
Group B hemolytic streptococcus	++	++	++
Chancroid	++++	++	++
Brucella infections	+	+	+
Rheumatic fever	0	0	0
Rheumatoid arthritis	0	0	0
Typhoid fever	0	0	0
Paratyphoid fever	0	0	0
Tuberculosis	0	0	0

pyridine remains the drug of choice in the more serious cases. Sulfathiazole has a greater protective power than sulfapyridine in experimental staphylococcal infections, and because of this, even though the clinical studies are not convincing, sulfathiazole is recommended in staphylococcal infections.

All strains of a particular organism do not respond in exactly the same way. For example, there may be certain strains of pneumococci that are not affected by sulfathiazole but do respond to sulfapyridine or vice versa. Such a condition may be true for the staphylococci or any other organism. For this reason, in some cases it may be important to shift from one sulfonamide drug to another. Also, there may be an occasional critically ill patient in whom it is well, in order to cover fully the possibilities, to use two of the drugs from the start.

The sulfonamides are usually given orally. For parenteral administration the two preparations that are principally used are neoprontosil and sodium sulfapyridine. Neoprontosil in the body breaks down into sulfanilamide, and its activity is dependent upon the concentration of sulfanilamide in the blood and tissues. Sodium sulfapyridine likewise changes to sulfapyridine.

The solution of sodium sulfapyridine is highly alkaline, and when the drug was first used it was expected that it would produce

\* Sodium sulfathiazole has now been accepted

TABLE 3—SULFONAMIDE THERAPY TOXIC REACTIONS

Renal irritation	Nausea and Vomiting
Hematuria	Dehydration
Colic	Acidosis
Anuria	Drug Rash
Calculus formation	Purpura
Nitrogen retention	Morbilloform
Uremia	Scarlatinaform
Anemia	Erythema
Simple	Erythema nodosum
Acute hemolytic	Drug Fever
Aplastic	
Leukopenia	Conjunctivitis
Granulocytopenia	
Agranulocytosis	Psychosis
	Mental depression
Hyperleukocytosis	Headache
Hepatitis—jaundice	Neuritis
Cyanosis	

severe local reactions if it were applied directly to the mucous membranes or other tissues. At the start it was recommended that sodium sulfapyridine be administered intravenously only and in concentrations of 5 per cent or less. Cautiously, other methods have been tried. We have used solutions of 25 to 35 per cent intravenously without any evident harmful effect on the vessels. We have used these same concentrated solutions intramuscularly, also without local reactions. Following the recommendations of Bullowa, we have routinely used sodium sulfapyridine orally, again without local reactions or any increase in the usual reactions encountered with sulfapyridine. Sodium sulfapyridine also may be used rectally, and we give it in rather large doses to obtain a satisfactory level of sulfapyridine in the blood. More recently, Taphin, Jacox, and Howland, at the Strong Memorial Hospital, have reported the use of sodium sulfapyridine by hypodermoclysis, giving 0.3 to 0.7 per cent solution in saline—that is, from 3 to 7 Gm. of the drug in 1,000 cc of saline, depending upon the dosage desired. They have reported excellent clinical results, no particular local reaction, and satisfactory blood levels of the drug.

The toxic reactions that in our experience have followed the administration of the sulfonamide drugs are included in Table 3. While the list is a lengthy one and shows a variety of conditions, some of which have been extremely bothersome, fortunately there have not been many serious reactions. Only one fatality, a case of aplastic anemia and toxic hepatitis following sulfapyridine, has occurred in our entire New York Hospital and Bellevue Hospital series of more than 1,500 patients treated with the sulfonamide drugs.

The renal irritation that has occurred after sulfapyridine, sulfathiazole, and more recently

from sulfadiazine has attracted particular attention because it is a unique type of reaction. These drugs or their acetylated products, in the course of excretion by the kidneys and urinary tract, form crystals or concretions of crystals which cause irritation and obstruction. If irritation only occurs, there may be hematuria and renal colic, but with obstruction there is oliguria or sometimes anuria, and it may lead to nitrogen retention and even uremia. Fortunately, these reactions occur infrequently. In our experience they have always been controlled by immediately discontinuing the drug and increasing the fluid intake.

Anemia and leukopenia may follow the use of any of the sulfonamide group of drugs, but again the severe forms of these conditions do not appear frequently. We have recognized only 2 cases of acute hemolytic anemia, and only 1 of these was in our hospital series. The 1 case followed a small dose of sulfanilamide and the other a small dose of sulfapyridine. Both cases sustained serious impairment of renal function, which existed to the time that it became impossible to follow the patients. In our Bellevue group, 1 patient developed severe aplastic anemia and died, showing also an extensive toxic hepatitis. Severe granulocytopenia occurred several times, but, following prompt interruption of chemotherapy, full recovery ensued. Marked hyperleukocytosis was discovered only once, and this was in 1 patient with acute hemolytic anemia.

Jaundice was produced by the sulfonamides only once, and this was in our fatal case of aplastic anemia and toxic hepatitis. Cyanosis, while it occurs frequently with sulfanilamide, is only rarely evident with sulfapyridine or sulfathiazole.

Nausea and vomiting occurred in over 50 per cent of patients treated with sulfapyridine, and this more than anything else militated against its use. The lowered incidence of this reaction has given sulfathiazole its chief advantage over sulfapyridine.

Skin eruptions are occasionally produced by all of the sulfonamide drugs. Drug fever usually accompanies the rashes, although fever may occur without any other manifestation of toxicity. Since our experience with the use of the sulfonamides has grown, we have become aware of a number of queer toxic reactions. A skin condition similar to erythema nodosum has been observed following sulfathiazole. Also, marked conjunctivitis has appeared after sulfathiazole. Various types of mild toxic psychosis have been noted,

and patients have also complained of a variety of headaches and neuralgias. Several patients have developed mild arthritic symptoms. We have not seen the peripheral neuropathy that follows the use of sulfamethylthiazole after any of the other sulfonamide drugs that we have used. Careful follow-up of patients has failed to reveal any late toxic reactions that might occur after discharge from the hospital.

The list of reactions is an imposing one, and while it should serve to emphasize the significance of recognizing the untoward effects of the sulfonamide drugs, it should not detract from a prompt and adequate usage of these highly effective agents. Furthermore, our experience shows that there is little danger provided the reactions are diagnosed promptly and the proper measures are instituted immediately.

DR FORKNER: We will discuss this subject later, and maybe then Dr Plummer can mention the things he believes need stressing.

DR MODELL will now tell us something about the pharmacologic aspects of those drugs.

DR WALTER MODELL: I shall merely mention some of the pharmacologic properties of sulfanilamide and indicate how some of the more frequently employed derivatives of sulfanilamide differ with regard to these properties. Such a comparison may be useful in selecting one of these drugs for the treatment of infections in which antibacterial action can be obtained from more than one member of the group of drugs.

I think it is safe to say at the outset that these substances are all pharmacologically similar, the differences are quantitative rather than qualitative. Sulfanilamide is fairly rapidly absorbed from the intestinal tract when taken by mouth, and a peak of the blood level is reached within about two or three hours after a single dose. Sulfathiazole is absorbed about as rapidly. Sulfapyridine is absorbed considerably less rapidly and more irregularly, five or more hours usually elapse after a single dose before peak concentration is reached. Sodium sulfapyridine, on the other hand, is much more rapidly absorbed than sulfapyridine, and peak blood concentration is reached about two and one-half hours after a single oral dose. Bullowa reported some cases in which a high level was reached as soon as five or ten minutes after a single dose of sodium sulfapyridine.

Once it is absorbed, sulfanilamide is distributed throughout the body, and the concentration in the tissues, exudates, and transudates is about the same as that found

in the blood, except that it is appreciably lower in the fat and bones. This is also true for sulfapyridine and sulfathiazole, although with sulfapyridine there seems to be some concentration of the drug in the liver. The concentration of sulfanilamide in the cerebrospinal fluid is somewhat less than that found in the blood. The concentration of sulfapyridine in the cerebrospinal fluid is said to range between 50 and 70 per cent, while that of sulfathiazole is even lower, perhaps 10 to 30 per cent of that found in the blood.

All these substances are acetylated mainly in the liver but also to some extent in the spleen. The acetylated compound has reduced antibacterial potency and is more toxic and less soluble in urine than the unconjugated drug. It is an example of a detoxification process gone astray. In the case of sulfanilamide, usually between 10 and 20 per cent is found in the blood in the acetylated form. In the case of sulfathiazole the percentage runs closer to from 20 to 30 per cent. With sulfapyridine the percentage runs even higher, sometimes over 50 per cent of the total sulfapyridine being in the acetylated form. The longer the substance remains in the body, the greater the amount of acetylation, and this may account in part for the high degree of acetylation of the sulfapyridine.

The substances are excreted almost quantitatively in the urine both in the free and combined form. Within twenty-four hours after a single dose of sulfanilamide or sulfathiazole, most of it can be recovered in the urine. In the case of sulfapyridine, excretion is slower, taking more than forty-eight hours for the greater part of a single dose to be excreted.

It is interesting to note that the renal clearance of free sulfanilamide or free sulfapyridine is less than the clearance of the conjugated substance, indicating that the renal tubule reabsorbs the uncombined sulfanilamide to a greater degree than the acetylated. In the case of sulfathiazole the clearance of free sulfathiazole is about equal to that of acetylated sulfathiazole, and this may, in part, account for the rapid elimination of sulfathiazole.

Recent determinations on animals put the drugs in this order of toxicity: sulfanilamide the least toxic, sulfathiazole next, and sulfapyridine the most toxic.

Nausea and vomiting occur much less frequently, as has already been mentioned, when sulfathiazole is used. In the case of sulfathiazole it has also been stated that there is

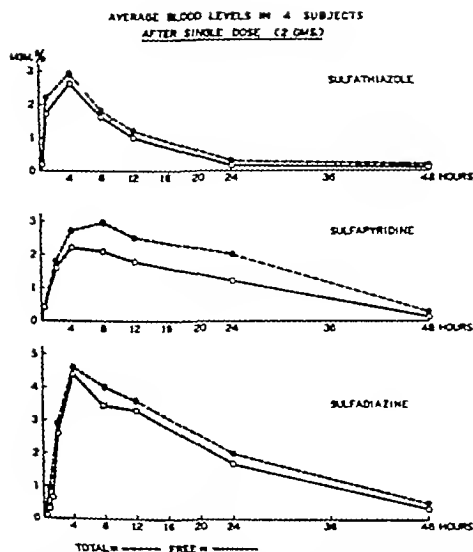


FIG 1 From Plummer, N, and Ensworth, H K. Proc Soc Exper Biol & Med. 45 734-738, 1940

no reduction in the carbon dioxide combining power of the blood

On the mechanism of action of these substances there is no agreement. Several suggestions have been made, such as a direct antibacterial action, an antitoxic action, stimulation of phagocytosis, or some anti-enzymatic action.

DR FORENER. Dr Magill is going to say something about the bacteriologic aspects of the sulfonamide drugs.

DR THOMAS P. MAGILL. The various sulfanilamide-like compounds seem to exert the same fundamental effect on bacteria *in vitro*, they differ chiefly in the degree in which the effect is exerted. Early investigations indicated that the *in vitro* sulfanilamide effect is essentially bacteriostatic, that sulfanilamide exerts little or no effect on bacteria during the early growth phase, and that the effect is not permanent. That is, bacteria regain their full virulence when, following exposure to sulfanilamide, they are washed and inoculated into animals. Moreover, it has been shown that sulfanilamide is not absorbed by the bacteria or diminished in concentration by contact with them.

The sulfanilamide effect *in vitro* is influenced by the nutrient value of the culture medium, peptone and other enriching substances inhibit the effect. It has been shown that the inhibition is due not to the direct action of peptone on sulfanilamide but to the ability of peptone to promote bacterial

growth. The effect is influenced also by the size of the inoculum, a culture that has received only a small inoculum may become eventually sterilized by sulfanilamide, whereas a similar culture that is heavily inoculated may finally grow out as well as the controls. The effect is also influenced by temperature—at 40 C bacteria are more readily destroyed than at 37 C, whereas at 0 C the effect seems to be negligible.

It has been suggested that *in vitro* sulfanilamide exerts its effect probably by interference with some function essential to bacterial metabolism. Several groups of investigators have isolated from bacteria a so-called growth factor that is effective in inhibiting the action of sulfanilamide in *in vitro* experiments. The factor has been isolated from a number of species of bacteria, moreover, the factor from any one species seems to be effective in inhibiting the sulfanilamide effect upon any of a number of other species. Recently it has been shown that actually two factors are involved—one is a growth factor, the other is a factor which in itself is inhibitory to the action of sulfanilamide but is not growth-promoting. This latter factor resembles in chemical properties *p*-aminobenzoic acid, which also possesses the capacity to inhibit the action of the sulfanilamide group of compounds. Although there is a direct quantitative relationship between the degree of inhibition and the concentration of the growth factor (or of *p*-aminobenzoic acid), varying with the concentration of sulfanilamide, no true molecular reaction occurs. On the basis of such evidence it is suggested that sulfanilamide exerts its effect by competition with a substrate, perhaps related to *p*-aminobenzoic acid, for the action of an essential enzyme.

Another interesting suggestion in support of which evidence has been obtained, is that sulfanilamide and related drugs inhibit the activity of catalase, thereby causing an accumulation of hydrogen peroxide. The suggestion is based on the theory that the sulfanilamide compounds when converted into the corresponding hydroxamides exert an anticatalase effect. A number of acyl aminobenzenesulfonhydroxamides have been tested and have been found to inhibit catalase activity, but to accept the theory it must be assumed that at least a small amount of sulfanilamide is converted into a compound with a hydroxylamino group.

A number of other interesting investigations have been made to determine the mechanism of the sulfanilamide effect, but there is time

and patients have also complained of a variety of headaches and neuralgias. Several patients have developed mild arthritic symptoms. We have not seen the peripheral neuropathy that follows the use of sulfamethylthiazole after any of the other sulfonamide drugs that we have used. Careful follow-up of patients has failed to reveal any late toxic reactions that might occur after discharge from the hospital.

The list of reactions is an imposing one, and while it should serve to emphasize the significance of recognizing the untoward effects of the sulfonamide drugs, it should not detract from a prompt and adequate usage of these highly effective agents. Furthermore, our experience shows that there is little danger provided the reactions are diagnosed promptly and the proper measures are instituted immediately.

DR FORENER: We will discuss this subject later, and maybe then Dr. Plummer can mention the things he believes need stressing.

Dr. Modell will now tell us something about the pharmacologic aspects of those drugs.

DR. WALTER MODELL: I shall merely mention some of the pharmacologic properties of sulfanilamide and indicate how some of the more frequently employed derivatives of sulfanilamide differ with regard to these properties. Such a comparison may be useful in selecting one of these drugs for the treatment of infections in which antibacterial action can be obtained from more than one member of the group of drugs.

I think it is safe to say at the outset that these substances are all pharmacologically similar, the differences are quantitative rather than qualitative. Sulfanilamide is fairly rapidly absorbed from the intestinal tract when taken by mouth, and a peak of the blood level is reached within about two or three hours after a single dose. Sulfathiazole is absorbed about as rapidly. Sulfapyridine is absorbed considerably less rapidly and more irregularly, five or more hours usually elapse after a single dose before peak concentration is reached. Sodium sulfapyridine, on the other hand, is much more rapidly absorbed than sulfapyridine, and peak blood concentration is reached about two and one-half hours after a single oral dose. Bullowa reported some cases in which a high level was reached as soon as five or ten minutes after a single dose of sodium sulfapyridine.

Once it is absorbed, sulfanilamide is distributed throughout the body, and the concentration in the tissues, exudates, and transudates is about the same as that found

in the blood, except that it is appreciably lower in the fat and bones. This is also true for sulfapyridine and sulfathiazole, although with sulfapyridine there seems to be some concentration of the drug in the liver. The concentration of sulfanilamide in the cerebrospinal fluid is somewhat less than that found in the blood. The concentration of sulfapyridine in the cerebrospinal fluid is said to range between 50 and 70 per cent, while that of sulfathiazole is even lower, perhaps 10 to 30 per cent of that found in the blood.

All these substances are acetylated mainly in the liver but also to some extent in the spleen. The acetylated compound has reduced antibacterial potency and is more toxic and less soluble in urine than the unconjugated drug. It is an example of a detoxification process gone astray. In the case of sulfanilamide, usually between 10 and 20 per cent is found in the blood in the acetylated form. In the case of sulfathiazole the percentage runs closer to from 20 to 30 per cent. With sulfapyridine the percentage runs even higher, sometimes over 50 per cent of the total sulfapyridine being in the acetylated form. The longer the substance remains in the body, the greater the amount of acetylation, and this may account in part for the high degree of acetylation of the sulfapyridine.

The substances are excreted almost quantitatively in the urine both in the free and combined form. Within twenty-four hours after a single dose of sulfanilamide or sulfathiazole, most of it can be recovered in the urine. In the case of sulfapyridine, excretion is slower, taking more than forty-eight hours for the greater part of a single dose to be excreted.

It is interesting to note that the renal clearance of free sulfanilamide or free sulfapyridine is less than the clearance of the conjugated substance, indicating that the renal tubule reabsorbs the uncombined sulfanilamide to a greater degree than the acetylated. In the case of sulfathiazole the clearance of free sulfathiazole is about equal to that of acetylated sulfathiazole, and this may, in part, account for the rapid elimination of sulfathiazole.

Recent determinations on animals put the drugs in this order of toxicity: sulfanilamide the least toxic, sulfathiazole next, and sulfapyridine the most toxic.

Nausea and vomiting occur much less frequently, as has already been mentioned, when sulfathiazole is used. In the case of sulfathiazole it has also been stated that there is

a patient free from vomiting. This discussion is not as significant as it was before the advent of sulfathiazole and sulfadiazine.

DR FORKNER. I would like to ask a question concerning the concentration of the drugs in the blood. Are you relying on that as the most important factor in determining dosage, or are you relying on other factors such as the general clinical condition of the patient? What is the status now, in your opinion, of the blood levels of these various drugs in relationship to their therapeutic effect?

DR PLUMMER. Again we must go to the experimental studies, particularly to the report that Marshall gave at The New York Academy of Medicine a short time ago. He found that in streptococcal infections in mice, in order to save 100 per cent of the animals, a certain concentration of sulfanilamide in the blood must be obtained. In other words, the survival rate is proportional to the drug concentration in the blood and in turn proportional to the dosage of the drug. The same relationship quite certainly applies to infections in man. To establish the lowest level that will give the highest percentage of recoveries has not been possible. It seems to be about 4 to 5 mg. per hundred cubic centimeters, which is the average level obtained in adults with sulfapyridine and sulfathiazole on a dosage of 1.0 Gm. every four hours after an initial dose of 2.0 Gm. In patients with severe infections and in cases when there has not been satisfactory response to treatment, the blood level determination is imperative and should be the guide to dosage.

DR H. B. RICHARDSON. How soon does the vomiting stop after the last dose of sulfapyridine, assuming a therapeutic level to be present in the blood?

DR PLUMMER. That is a variable. I would say that usually it stops in from eight to twenty-four hours after the last dose of the drug.

DR WHEELER. If a generally satisfactory dosage schedule does not produce a blood level that can be regarded as satisfactory—as happens not infrequently—what does one do? Do you increase the dose of the drug, and, if so, what limits of increase do you believe are safe, or do you feel that reduction of the fluid intake will be effective in raising the blood level?

DR PLUMMER. The degree of absorption of sulfapyridine or sulfathiazole—not so much of sulfadiazine or sulfanilamide—is variable. In those patients who show a particularly low level or one below that estimated

to be optimal for an individual case, there are several means of elevating the concentration. The most certain method is that of supplementing the oral dosage by parenteral administration of an additional amount. Increasing the oral dosage may be tried, but it does not always prove effective because the problem is more apt to be one of absorption from the gastrointestinal tract rather than one of dosage. The reduction of fluid intake might apply in a patient receiving excessive quantities of fluid but might be dangerous in the usual case. Occasionally a patient receiving sulfapyridine will show a low blood level of free sulfapyridine but a high level of total drug, indicating a high degree of acetylation. In such a case, because of the possibility of acetylated sulfapyridine crystals obstructing the urinary tract, it is dangerous to increase the dosage, and it might be wiser to change to another sulfonamide drug.

DR CARY EGGLESTON. Have you any evidence that points to an explanation of why certain rare patients will fail to develop a satisfactory blood level over a considerable period of time with increasing dosage and limitation of fluid and will then, perhaps by change of drug within the group, develop an extremely high level? I have in mind a patient in whom it seemed impossible to get the blood level above about 3 mg. per hundred cubic centimeters with sulfapyridine. With the use of sodium sulfapyridine, large doses were required to produce significant rise. After continuation of such doses for several days the blood level rather abruptly rose to about 13 or 14 mg. per hundred cubic centimeters.

DR PLUMMER. No, I do not have a definite explanation, but I believe that it was either a question of acetylation or of excretion by the kidneys.

DR EGGLESTON. There were no renal symptoms.

DR MODELL. It is said that the degree of acetylation varies greatly in the different individuals. Does the tendency in an individual to a high degree of acetylation of one compound apply to the other sulfonamide derivatives?

DR PLUMMER. In a few cases where we have compared sulfapyridine with sulfathiazole, we have found that a patient showing high acetylation with sulfapyridine also showed a high acetylation with sulfathiazole. Whether that applies to sulfadiazine we do not know.

DR JANET TRAVELL. One of the toxic

only to point out that, in general, they indicate that the effect is due to an interference with bacterial metabolism. Most of the evidence suggests that the interference is effected by the sulfanilamide compounds competing with certain substrates for essential enzyme activity.

DR FORKNER We are now going to have the subject discussed generally, and I am sure that Dr Plummer, Dr Modell, Dr Magill, and the others here will try to answer any questions you may have in mind.

DR McKEEN CATTELL I would like to ask Dr Plummer a question with regard to the acetylation of these compounds. I understand that he has been working with sulfadiazine and that it is somewhat less acetylated than the others.

DR PLUMMER We have some curves here that show that (Fig 1)

These curves show the average blood levels of free and total drug after a single dose of sulfathiazole, sulfapyridine, and sulfadiazine. We believe that the difference between the two curves with each drug represents the amount of acetylation. Sulfadiazine shows a more rapid absorption and much less acetylation than sulfapyridine. When compared with sulfathiazole it shows about the same acetylation and rate of absorption but a much higher level and a slower elimination.

DR C H WHEELER I wonder, Dr Plummer, if you would discuss the significance of the relationship between acetylated and free drug.

DR PLUMMER The drug is given as the free drug, and in the body, probably largely in the liver, it is changed to the acetylated or combined form. It is most significant that the combined drug is not active. Furthermore, such a toxic reaction, as the renal irritation which sometimes follows the use of these drugs is dependent more upon acetylated drug than upon the free drug. The crystals found in the urine and the stones formed in the kidneys and ureters are for the most part the acetylated fraction of the drug.

DR HARRY GOLD Is not this acetylation merely an illustration of a general body mechanism of protection against poisons?

DR PLUMMER I think you can tell us more about that than I could. I would like to know.

DR GOLD There are a great many drugs that are eliminated by synthesis. Chloral hydrate is eliminated by synthesis of a breakdown product with glycuronic acid. Carboic acid is detoxified by synthesis into

ethereal sulfate. Epinephrine is inactivated by synthesis into a sulfate ester. These processes are not always quite complete, so that some of the drug remains unchanged.

DR MODELL The statement is made that in the case of the acetylated sulfapyridine precipitated crystals are found in the renal pelvis, whereas in the case of the acetylated sulfathiazole they are found in the tubules. Is that your experience?

DR PLUMMER That is not our experience, but we follow the experimental studies that have been reported. Antopol and his co-workers have been particularly interested in this investigation, and I believe that in their experimental animals acetylsulfapyridine crystals are usually formed in the renal pelvis and in the ureters, while acetylsulfathiazole crystallized in the tubules. Furthermore, Antopol and his co-workers have reported that after the intravenous injection of a large amount of sodium sulfathiazole, the free drug precipitated in the collecting tubules and produced a fatal reaction in the animal.

DR WHEELER The nausea and vomiting that follow the use of sulfanilamide or its derivatives can be most disturbing factors and not rarely require that the drug be discontinued. In this hospital we have tried all sorts of ways of controlling it. We have given the sulfapyridine with sodium bicarbonate, with milk, and with applesauce. We have also given it in the form of the solution or suspension in 50 per cent glucose. It is my impression that none of those measures is effective in reducing the nausea and vomiting, with the possible exception of 50 per cent glucose. What is your experience? Do you know of any way of administering sulfapyridine which will diminish the nausea and vomiting?

DR PLUMMER Our experience has been the same. We have found no way of controlling that bothersome toxic manifestation except by reducing the level of sulfapyridine in the blood. It is because of this and certain other observations that we believe the nausea and vomiting is of central origin. The methods that may be used to reduce the blood level are obvious. The simplest is to omit the drug for one or two doses. The other method is to increase the fluid intake either by infusions or hypodermoclyses or by forcing fluids by mouth. These procedures, by reducing the blood level, naturally diminish the range of efficacy of the agent. So in each case it is necessary to consider whether it is more important to have a higher level or

that the cure in this disease is the distinct exception rather than the rule

Dr Modell, will you summarize for us?

Dr MODELL The conference is in a sense a summary of the mass of information which has been accumulated on this subject

I would like to point out that, while in a relatively short time the sulfonamide drugs have proved to be of great value in the treatment of an impressive list of serious ailments, there is already reason to believe that in time there will be new additions to the sulfonamide drugs which will increase their range of antibacterial action, which will be less toxic for man, and which will be easier to administer and control

It has been indicated here today that lives can be saved if these drugs are used where they are indicated and if the blood levels of the drug are used as a guide to the therapeutic regimen Toxic effects will be reduced to a minimum if the concentration in the blood, particularly of the acetylated form, and the

blood picture are followed carefully These measures will probably be valid no matter what or how many new derivatives are added to the list.

The knowledge of the specific antibacterial actions of each member of this group of drugs and a correlation between the clinical features of each case and the pharmacologic features of the drugs—such as the rate of absorption, rate of elimination, toxic effects, concentration of the drug in the cerebrospinal fluid, etc—will lead to the selection of the best member of the group of drugs in each instance

The good reputation of the sulfonamide drugs must be guarded by an understanding of their action and by careful use The indiscriminate administration of these drugs, which is already practiced in some quarters, and the relaxation of precautions with drugs so potent and so widely used may lead to a wave of accidents which will make for a fear of the drugs, throw them into disrepute, and retard progress in this field

## WISCONSIN EXPERIMENTS ABANDONED NO DEMAND

It is of interest to students of sickness insurance plans to note that the experiment in voluntary sickness insurance carried on for several years by the Douglas County Medical Society in Superior, Wisconsin, has been discontinued, says *Minnesota Medicine*

Reasons for abandonment are significant first, that there was an exceedingly small demand for the plan, second, the cost of acquiring subscribers was extremely high, third, the plan did not reach those in the low-income group for which

it was designed, fourth, operating costs, which included the new "middle man," were high, fifth, premiums were too small to permit payment of minimum standard fees for the community to the physicians while at the same time paying overhead costs and creating a necessary reserve

Discontinuance of the trial plan in Milwaukee has also been announced for much the same reasons, likewise, the effort started some time ago to develop a plan in Rock County

## THE CART BEFORE THE HORSE

Some of the advocates of compulsory sickness insurance argue that this system should be adopted now as a defense measure Apparently they are unaware of the more fundamental medical defense projects which are lagging for lack of funds, observes the *New York Medical Week*

The production of blood plasma is a striking example The Army desires 50,000 quarts a year As Dr Morris Fishbein has pointed out, this requires 200,000 donors To obtain that number of qualified subjects, at least 600,000 persons must be examined, physically and serologically This would not be a great expense, compared to the billions that are tossed about so lightly at Washington, but so far the government has made no move to pay for such examinations

On the same subject, the processing of blood plasma requires special apparatus At present only five machines are available for this purpose in the entire country If the government has ordered more, we have not heard of it

In the meantime, our own county committee on blood transfusion is trying to work out a method for supplying blood or plasma to the

indigent when sorely needed and to the small hospitals where blood banks are not practical

A similar situation exists with respect to medicomilitary research. Even such immediately important fields as aviation medicine are not being explored to their limits because grants are made in occasional small sums where a couple of millions is needed

If the government is having difficulty in financing these unquestionably urgent defense measures, how can it even consider compulsory sickness insurance? After all, the amounts required to organize the production of blood plasma and research into the medical problems associated with aviation and submarine warfare are a drop in the bucket compared to the enormous costs of compulsory sickness insurance.

Anything could be a "defense measure" by the definition that includes compulsory sickness insurance in this term. Actually there is nothing obligatory prepayment would supply which is not already available at lower cost. Before the government undertakes a costly controversial project of this nature in the name of defense, it should provide funds for defense necessities

reactions that is listed is cyanosis. Would you say something about its importance and its etiology?

DR PLUMMER I would rather confine my remarks to the clinical observations that we have made. Cyanosis occurs in a high percentage of the cases following sulfanilamide. It is much less evident following sulfapyridine, sulfathiazole, or sulfadiazine. Cyanosis is a common accompaniment of pneumonia, and, therefore, to estimate the degree of cyanosis caused by sulfonamide therapy in these cases is rather difficult. I am convinced, however, since using sulfadiazine, that some cyanosis is caused by sulfapyridine. In a few cases where we have changed from sulfapyridine to sulfadiazine the patients' appearance changed greatly. With sulfapyridine they were slightly cyanotic and had a gray appearance, with sulfadiazine they became bright and more normal in appearance.

As to the etiology of cyanosis, I think that you should ask someone more authoritative on this subject.

DR. FORENER Do you care to discuss that, Dr. Gold—the mechanism of cyanosis?

DR. GOLD Methemoglobin has been found, also sulphemoglobin, diminished oxygen saturation, and a colored derivative of sulfanilamide which might stain the red cells. Each in turn has been suggested as the cause of the cyanosis. But the findings of different workers are not in harmony, and the cause of the cyanosis still remains to be established. It appears to be a fact, however, that the cyanosis is harmless.

DR. RICHARDSON Have these drugs any tendency to produce thrombosis of the vessels?

DR. PLUMMER Following the use of sodium sulfapyridine intravenously there have been reported thromboses at the site of injection. However, as I mentioned before, we have been using a particularly high concentration of sodium sulfapyridine intravenously and have encountered none.

DR. W. S. LOEWE What is known about the time factor in obtaining a satisfactory therapeutic result? Is it known whether a pushlike, short action of a high concentration or whether the prolonged action of a moderate blood concentration is more important for success?

DR. PLUMMER Just how important the time factor is we do not know. Some observations have been made, particularly in cases of subacute bacterial endocarditis. As you know, in this disease the results have

not been particularly striking with the sulfonamide drugs, but there have been a few patients who seem to have been cured, and there have been a number of patients in whom the temperature has dropped down and the blood cultures have temporarily become sterile. Now the observation that has been made is this: that if the drug is given in high concentration at the start, the possibility of obtaining a favorable response seems to be greater than when starting with a low concentration and gradually building it up.

DR. MODELLE Have you found that the use of heparin has made any difference in the treatment of subacute bacterial endocarditis with sulfapyridine?

DR. PLUMMER We really cannot give the answer to that. Dr. Kelson is working at Bellevue, and we are following his work carefully. My present personal impression is that the patients do just as well without heparin.

DR. EGGLESTON I should like to express that view as well. From the study of a considerable number of these cases of subacute bacterial endocarditis, so far as I can see the addition of heparin does not increase the likelihood of recovery. I have seen several remissions in the course of the subacute bacterial endocarditis but no cure.

DR. GOLD Your experience with subacute bacterial endocarditis, Dr. Plummer, corresponds then with Dr. Eggleston's?

DR. PLUMMER I believe that I have seen several patients who have been cured of subacute bacterial endocarditis by the sulfonamide drugs. Some of these patients Dr. Eggleston also has seen, and it may be that we would disagree as to whether or not they were actual cures.

DR. EGGLESTON I have seen cured patients. I simply remarked that in my personal experience I have yet to secure a cure.

DR. PLUMMER What do you think about those at Bellevue?

DR. EGGLESTON I think they are cured. So far as current evidence is able to establish a cure, they are probably cured.

DR. GOLD Let's get the record straight. Are these cures with or without the anticoagulant heparin?

DR. PLUMMER Both ways, and on that basis I believe that the important factor is that of securing high concentrations of drug in the blood and that just as much can be accomplished with the drug alone as with the drug and heparin.

DR. FORENER It should be made clear

# Medical Preparedness

## Vacancies in the Medical Corps Reserve

**S**ELECTIVE Service registrants who are qualified physicians and surgeons are urged to apply for commissions in the Medical Corps Reserve, it was announced on April 7, 1941, by National Headquarters, Selective Service System.

State Directors of Selective Service, it was said, have been asked to request local boards to communicate with all such registrants and encourage them to seek admission into the Reserve Corps instead of inducting them as selectees for military training.

Several thousand vacancies in the Medical Corps Reserve were announced recently by the War Department which said that physicians and surgeons commissioned would be given the grade of first lieutenant. The announcement by National Headquarters, Selective Service System, is in cooperation with the War Department to fill this need.

The memorandum from National Headquarters said:

"Recently in several cases, physicians and sur-

geons have been put in Class I-A and inducted into service although they might have served to better advantage both to the Army and to themselves in the capacity of medical officers.

"To assist the War Department in its procurement program, it is desired that you present this situation to the attention of local boards in your state.

"It is suggested that they communicate with registrants who are licensed physicians and surgeons and encourage them to apply to the Corps Area Surgeon for reserve commissions in the Medical Corps. It is particularly desirable to avoid inducting men who can qualify for such commissions and be made available for immediate active duty."

The announcement by National Headquarters pointed out that only those doctors who are graduates of approved medical schools who are licensed or eligible to be licensed to practice medicine in the state in which they live are to be considered for commissions.

## Unique Plan of the Mount Sinai Hospital to Cooperate on Defense

**T**HE call to military duty of Dr. Edgar M. Bick, associate orthopedist at the Mount Sinai Hospital, has called attention to a unique plan whereby the entire medical staff of the Mount Sinai Hospital shares its responsibilities in the event of a military emergency. Dr. Bick, a medical reserve officer, is the first member of the attending staff of the hospital to be called to military service.

Under the plan developed by the members of the Medical Board and of the Association of the Junior Medical Staff of the hospital, upon the declaration by the President of a military emergency requiring the calling of medical reserve officers to military duty, all members of the Mount Sinai Hospital medical staff remaining in civilian practice will contribute a percentage of their net income from medical practice to a common fund that will be used to help the families of members called to active military service. Designed to assist such doctors in maintaining obligations to their dependents, the plan enables those who remain behind to share in the common responsibility for defense.

Payments from the fund will be prorated on the basis of the number of years since the doctors' graduation from medical school. This will be paid monthly, without regard to military rank, to each member of the hospital's medical staff called for active full-time military service or to his family or designated agent. The same payments will be continued for six months after honorable discharge from military duty. In the event of death or total disability while in military service, the payments will be continued for two years after death or onset of total disability.

The project will begin on May 1 with contributions into the common fund of a percentage of the net medical income for the year 1940, payable in monthly installments. This will permit the accumulation of a reserve to cushion subse-

quent increases in the percentage contribution as more men are called for military duty. The accumulation of a substantial reserve in excess of immediate requirements will enable members of the medical staff to contribute to a common pool from which they may benefit at some future time if called to military service. Contributions to the common fund will be continued until the termination of the military emergency or until all obligations have been discharged to those who died or were totally disabled while in military service.

The fund will be administered by a committee of three trustees of the hospital appointed by the president of the hospital—namely, Carl J. Austrian, chairman, Robert Lehman, and Jacob Stone. The president of the Medical Board, Dr. George Baehr, and the chairman of the Association of the Junior Medical Staff, Dr. Arthur S. W. Touroff, will assist the committee in an advisory capacity. The operating costs of administration will be defrayed by trustees of the hospital so that all contributions to the fund will be used for the benefit of the participating physicians.

As an additional step to help the families of those in military service through operation of the fund, it has been agreed by the hospital staff that members of the staff on military duty will receive a percentage of the fees paid by their patients in their absence to other members of the medical staff of the hospital and that in the event of death or total disability of a staff member while on military duty, these payments will continue until two years after the death or the onset of total disability.

It is believed that the Mount Sinai Hospital is the first institution to make arrangements of this type, whereby the entire medical staff shares in the emergency responsibility. It is expected that others will develop similar plans.

# Medical Relief

For the Aged, the Blind, and for Dependent Children

## Joint Statement

*From the New York State Department of Social Welfare  
and the Medical Society of the State of New York*

IN THE welfare districts in the state where physicians have heretofore been paid by the Welfare Department on a fee-for-service basis for authorized medical care given to persons receiving Old Age Assistance and Assistance to the Blind, a change effective April 1, 1941, has been made in the method of payment—so that such persons will pay physicians directly for such medical care given during the preceding month. This method has been used for some time in administering Aid for Dependent Children.

The basis of this change is that the Social Security Board has held that under the Social Security Act it cannot reimburse the state from federal funds for any monies paid to anyone other than the person eligible for these two forms of public assistance. Since the maximum basis of reimbursement has been raised by law from \$30 to \$40 per month, it is now possible to incorporate medical expenses in the direct grant and secure additional federal reimbursement—estimated at more than half a million dollars per year.

It was recognized by the State Department of Social Welfare and representatives of the Medical Society of the State of New York and the New York State Association of Public Welfare Officials that there might be some difficulties in installing this "Direct Payment Plan" which, for the purposes of securing additional federal funds, was designed to provide for payment directly to the physician by the person in receipt of Old Age Assistance and Assistance to the Blind who, with the approval of the local welfare officer, had received medical services from this physician.

The basic premise of this plan was that these persons would meet their medical obligations in the same way that they have met their obligations for food, rent, and the other necessities of life in the past.

It was agreed by the representatives of the medical profession and the welfare officials that the installation of this plan would require careful preliminary interpretation and cooperative planning in each community.

After a number of discussions last fall, in which the State Department of Social Welfare called attention to its obligation to take advantage of the potential savings of state funds which might be expected from the installation of the "Direct

Payment Plan," the representatives of the Medical Society of the State of New York agreed to go along with this plan, and to urge that the local welfare commissioners discuss fully with local physicians the problems involved to secure their full cooperation.

In the communities where there has been adequate interpretation and full discussion between local physicians and welfare officials the installation of the "Direct Payment Plan" has progressed smoothly.

The representatives of the Medical Society of the State of New York and the State Department of Social Welfare agreed that the medical features of the program would be subject to a careful review after six months operation to determine

- 1 Whether or not the anticipated savings materialize,
- 2 Whether there are difficulties in the operation of the "Direct Payment Plan" which cause individual physicians or local welfare officers concern.

Both the State Department of Social Welfare and the Medical Society of the State of New York will be glad to review and make every effort to solve any locally unresolved problems encountered in the installation and operation of the "Direct Payment Plan" if the specific problems, with identifying details, are submitted to the undersigned representatives.

It is understood, of course, that local physicians will submit most of these problems to their local medical society and local welfare department for primary consideration, since the success of any medical program is dependent on local effort and cooperation. There is no desire on the part of the state agencies to interfere with local autonomy in these matters—they will be glad, however, to offer assistance when requested, if and when local efforts toward a cooperative solution have become exhausted.

CHRISTOPHER WOOD, M D

*Chairman,*

*Subcommittee on Medical Relief, Medical Society of the State of New York*

H JACKSON DAVIS, M D

*Chief Medical Officer,*

*State Department of Social Welfare*

## AMERICAN ASSOCIATION FOR THE STUDY OF GOITER

The American Association for the Study of Goiter will hold a meeting in the Hotel Statler, Boston, Massachusetts, May 12, 13, and 14, 1941, instead of the date originally announced

The program for the three-day meeting will consist of papers dealing with goiter and other diseases of the thyroid gland, of dry clinics, and of demonstrations

# Medical Preparedness

## Vacancies in the Medical Corps Reserve

SELECTIVE Service registrants who are qualified physicians and surgeons are urged to apply for commissions in the Medical Corps Reserve, it was announced on April 7, 1941, by National Headquarters, Selective Service System.

State Directors of Selective Service, it was said, have been asked to request local boards to communicate with all such registrants and encourage them to seek admission into the Reserve Corps instead of inducting them as selectees for military training.

Several thousand vacancies in the Medical Corps Reserve were announced recently by the War Department which said that physicians and surgeons commissioned would be given the grade of first lieutenant. The announcement by National Headquarters, Selective Service System, is in cooperation with the War Department to fill this need.

The memorandum from National Headquarters said:

"Recently in several cases, physicians and sur-

geons have been put in Class I-A and inducted into service although they might have served to better advantage both to the Army and to themselves in the capacity of medical officers.

"To assist the War Department in its procurement program, it is desired that you present this situation to the attention of local boards in your state.

"It is suggested that they communicate with registrants who are licensed physicians and surgeons and encourage them to apply to the Corps Area Surgeon for reserve commissions in the Medical Corps. It is particularly desirable to avoid inducting men who can qualify for such commissions and be made available for immediate active duty."

The announcement by National Headquarters pointed out that only those doctors who are graduates of approved medical schools who are licensed or eligible to be licensed to practice medicine in the state in which they live are to be considered for commissions.

## Unique Plan of the Mount Sinai Hospital to Cooperate on Defense

THE call to military duty of Dr. Edgar M. Bick, associate orthopedist at the Mount Sinai Hospital, has called attention to a unique plan whereby the entire medical staff of the Mount Sinai Hospital shares its responsibilities in the event of a military emergency. Dr. Bick, a medical reserve officer, is the first member of the attending staff of the hospital to be called to military service.

Under the plan developed by the members of the Medical Board and of the Association of the Junior Medical Staff of the hospital, upon the declaration by the President of a military emergency requiring the calling of medical reserve officers to military duty, all members of the Mount Sinai Hospital medical staff remaining in civilian practice will contribute a percentage of their net income from medical practice to a common fund that will be used to help the families of members called to active military service. Designed to assist such doctors in maintaining obligations to their dependents, the plan enables those who remain behind to share in the common responsibility for defense.

Payments from the fund will be prorated on the basis of the number of years since the doctors' graduation from medical school. This will be paid monthly, without regard to military rank, to each member of the hospital's medical staff called for active full-time military service or to his family or designated agent. The same payments will be continued for six months after honorable discharge from military duty. In the event of death or total disability while in military service, the payments will be continued for two years after death or onset of total disability. The project will begin on May 1 with contributions into the common fund of a percentage of the net medical income for the year 1940, payable in monthly installments. This will permit the accumulation of a reserve to cushion subse-

quent increases in the percentage contribution as more men are called for military duty. The accumulation of a substantial reserve in excess of the medical staff to contribute to a common pool of immediate requirements will enable members of the medical staff to contribute at some future time from which they may benefit at some future time if called to military service. Contributions to the common fund will be continued until the termination of the military emergency or until all obligations have been discharged to those who died or were totally disabled while in military service.

The fund will be administered by a committee of three trustees of the hospital appointed by the president of the hospital—namely, Carl J. Austrian, chairman, Robert Lehman, and Jacob Stone. The president of the Medical Board, Dr. George Baehr, and the chairman of the Association of the Junior Medical Staff, Dr. Arthur S. W. Touroff, will assist the committee in an advisory capacity. The operating costs of administration will be defrayed by trustees of the hospital so that all contributions to the fund will be used for the benefit of the participating physicians.

As an additional step to help the families of those in military service through operation of the fund, it has been agreed by the hospital staff that members of the staff on military duty will receive a percentage of the fees paid by their patients in their absence to other members of the medical staff of the hospital and that in the event of death or total disability of a staff member while on military duty these payments will continue until two years after the death or the onset of total disability.

It is believed that the Mount Sinai Hospital is the first institution to make arrangements of this type, whereby the entire medical staff shares in the emergency responsibility. It is expected that others will develop similar plans.

# Medical Relief

For the Aged, the Blind, and for Dependent Children

## Joint Statement

*From the New York State Department of Social Welfare  
and the Medical Society of the State of New York*

**I**N THE welfare districts in the state where physicians have heretofore been paid by the Welfare Department on a fee-for-service basis for authorized medical care given to persons receiving Old Age Assistance and Assistance to the Blind, a change effective April 1, 1941, has been made in the method of payment—so that such persons will pay physicians directly for such medical care given during the preceding month. This method has been used for some time in administering Aid for Dependent Children.

The basis of this change is that the Social Security Board has held that under the Social Security Act it cannot reimburse the state from federal funds for any monies paid to anyone other than the person eligible for these two forms of public assistance. Since the maximum basis of reimbursement has been raised by law from \$30 to \$40 per month, it is now possible to incorporate medical expenses in the direct grant and secure additional federal reimbursement—estimated at more than half a million dollars per year.

It was recognized by the State Department of Social Welfare and representatives of the Medical Society of the State of New York and the New York State Association of Public Welfare Officials that there might be some difficulties in installing this "Direct Payment Plan" which, for the purposes of securing additional federal funds, was designed to provide for payment directly to the physician by the person in receipt of Old Age Assistance and Assistance to the Blind who, with the approval of the local welfare officer, had received medical services from this physician.

The basic premise of this plan was that these persons would meet their medical obligations in the same way that they have met their obligations for food, rent, and the other necessities of life in the past.

It was agreed by the representatives of the medical profession and the welfare officials that the installation of this plan would require careful preliminary interpretation and cooperative planning in each community.

After a number of discussions last fall, in which the State Department of Social Welfare called attention to its obligation to take advantage of the potential savings of state funds which might be expected from the installation of the "Direct

Payment Plan," the representatives of the Medical Society of the State of New York agreed to go along with this plan, and to urge that the local welfare commissioners discuss fully with local physicians the problems involved to secure their full cooperation.

In the communities where there has been adequate interpretation and full discussion between local physicians and welfare officials the installation of the "Direct Payment Plan" has progressed smoothly.

The representatives of the Medical Society of the State of New York and the State Department of Social Welfare agreed that the medical features of the program would be subject to a careful review after six months operation to determine

- 1 Whether or not the anticipated savings materialize,
- 2 Whether there are difficulties in the operation of the "Direct Payment Plan" which cause individual physicians or local welfare officers concern.

Both the State Department of Social Welfare and the Medical Society of the State of New York will be glad to review and make every effort to solve any locally unresolved problems encountered in the installation and operation of the "Direct Payment Plan" if the specific problems, with identifying details, are submitted to the undersigned representatives.

It is understood, of course, that local physicians will submit most of these problems to their local medical society and local welfare department for primary consideration, since the success of any medical program is dependent on local effort and cooperation. There is no desire on the part of the state agencies to interfere with local autonomy in these matters—they will be glad, however, to offer assistance when requested, if and when local efforts toward a cooperative solution have become exhausted.

CHRISTOPHER WOOD, M D  
Chairman,

Subcommittee on Medical Relief, Medical  
Society of the State of New York

H JACKSON DAVIS, M D  
Chief Medical Officer,

State Department of Social Welfare

## AMERICAN ASSOCIATION FOR THE STUDY OF GOITER

The American Association for the Study of Goiter will hold a meeting in the Hotel Statler, Boston, Massachusetts, May 12, 13, and 14, 1941, instead of the date originally announced.

The program for the three-day meeting will consist of papers dealing with goiter and other diseases of the thyroid gland, of dry clinics, and of demonstrations.

event was arranged by the medical board and alumni association of St Catherine's Hospital. More than 150 persons, chiefly members of the medical profession, attended. A watch was presented to Dr McAteer.

Several case presentations were offered at a meeting of the East New York Medical Society in the Temple auditorium, on April 7.

Speakers included Dr Abraham H Marel, who talked on dermatomyositis and Dr Richard Emmett, dermatologist at Beth-El Hospital. Dr Jack Wolf also discussed recent advances in the treatment of common skin diseases. Dr William Levine presided.

Some 400 borough physicians are cooperating as medical examiners with the 101 Brooklyn local draft boards.

These doctors were chosen from more than 1,000 volunteers by the preparedness committee of the county society. An additional 175 borough specialists have been named to advisory boards.

#### Monroe County

What's new in cancer control was revealed to Rochester audiences in talks by Dr Clarence Cool, Little, managing director of the American Society for the Control of Cancer, on March 30.

His first talk was to a radio audience from Station WHAM, after which he addressed a public meeting at the Rochester Academy of Medicine on "The Optimistic Side of Cancer." This meeting was sponsored by the Rochester Academy of Medicine, county medical society, and University of Rochester School of Medicine in cooperation with the Women's Field Army of the American Society for Control of Cancer.

At 8 45 P.M. on April 1 Dr Little addressed a meeting of doctors at the Academy of Medicine on "The Cancer Problem Today."

#### Montgomery County

The April meeting of the county society was held at the Elks Club in Amsterdam on April 8. Dr John E. Heslin, professor of urology, Albany Medical College, delivered a paper on "Recent Advances in the Treatment of Infections of the Urinary Tract." The point was stressed that while the sulfur compounds have revolutionized the treatment of these infections, the dangers from procrastination have steadily increased and are being overlooked. Illustrated slides revealed the pathology behind many recurrent urinary infections which responded to the sulfur compounds temporarily. Discussion was led by Dr C. A. Spence, and Dr P. J. Fitzgibbons, health officer, who remarked on the scarcity of cases of acute anterior urethritis.—Reported by Roger Conant, M.D., Secretary.

#### New York County

The special committee of the county society on maternal welfare met at The New York Academy of Medicine on April 9, with the following program:

- 1 Cardiac Decompensation, Undelivered
- 2 Spontaneous Delivery, Intestinal Obstruction.
- 3 Attempted Forceps Delivery, Version, Sepsis
- 4 Sub-acute Bacterial Endocarditis, Spontaneous Delivery

- 5 Eclampsia, Forceps Delivery
- 6 Latzko Caesarean Section, Shock.
- 7 Eclampsia, Spontaneous Delivery
- 8 Eclampsia? Undelivered.
- 9 Spontaneous Delivery, Sepsis
- 10 Mid-forceps Delivery, Bladder Injury, Psychosis

The New York Surgical Society met at the Academy of Medicine on April 9 and listened to a symposium on diseases of the thyroid.

At the stated meeting of the Academy of Medicine on April 3 the sixteenth Hermann Michael Biggs Memorial Lecture was delivered by Clarence A. Mills, professor of experimental medicine, University of Cincinnati College of Medicine, on "The Relation of Climate and Geography to Health."

The Harvey Society met at the Academy of Medicine on April 10, and heard a paper on "Hormones and the Process of Aging" by Leo Loeb, eminent professor of pathology, Washington University School of Medicine.

The Harlem Medical Assn. held a symposium on neuropsychiatry at its meeting on April 2.

On March 29 a dinner was held at the Yale Club in honor of Dr Foster Kennedy, who has been director of the Bellevue Neurological Service since it was organized in May, 1916. Dr Edwin G. Zabarsky was toastmaster and addresses were made by Drs Bernard Sachs, Charles A. Elsberg, and Foster Kennedy. Dr Otto Marburg made a few extemporaneous remarks.

#### Onondaga County

At the "Maternal Welfare Teaching Day" at the Syracuse University College of Medicine on April 3, a chart showing the decline in the death rate of mothers in childbirth for Syracuse was shown by Dr Charles A. Gwynn, professor of clinical obstetrics.

Figures given were 4.1 per cent for 1936, 3.3 per cent for 1939, and 1.8 per cent for 1940. Dr Gwynn pointed out that the declining death rate was opposed to a rising birth rate. There were 3,600 births in 1936 and 4,400 in 1940.

A call for medical volunteers to lighten the work of physicians serving on draft boards is sounded by Dr Edward S. Van Deyn, chairman of the Medical Preparedness Committee in an article in the April issue of the county society Bulletin.

"Complaints of the medical members of the draft boards are growing in extent and volume," he writes. "The work grows heavier and more interfering with their regular practices than was anticipated. And it promises to continue not just until the Army has been increased to its designated size but for several years."

"In Rochester they have increased the number of medical men on their sixteen draft boards to nine men each. In Syracuse we have now received authority to increase the boards and we are increasing the number to six on each of the thirteen boards as fast as we receive the names of medical volunteers."

"We hope all doctors who possibly can will volunteer for this work. It is their patriotic duty, and greater numbers will reduce the burden

# Medical News

## County News

### Albany County

Major Julia C. Stamson, president of the American Nurses' Association and former superintendent of the Army Nurse Corps and director of Nursing Service of the A E F, was the speaker at the sixth of the series of addresses on Health and Defense Mobilization organized by the Public Relations Committee of the Albany Medical College and Hospital, in cooperation with the county society and Brady, Childs, Memorial and St Peter's hospitals, on Friday, March 28, in the auditorium of the Albany Law School.

### Broome County

A business meeting of the county society was held on April 8.

A course of lectures on heart disease was given at the Binghamton City Hospital on April 3, 10, 17, and 24, and will conclude on May 8.

The radio speakers on Thursday evenings in April were Dr. George C. Vogt, Superintendent Robert Johnson of Ideal Hospital, Drs. H. Jackson King, W. J. Demer, P. J. Gorman, E. R. Diokson, and Mrs. Dorothy Titchener.

### Chemung County

Steps toward establishment of a county laboratory, as urged by the county society, will not be taken this year because there are no funds for that purpose in the budget, the Board of Supervisors has decided.

The supervisors' hospital committee is expected to recommend that contracts be made with Arnot-Ogden and St. Joseph's hospitals to conduct all 1941 laboratory tests, according to a report in the *Elmira Star Gazette*.

The committee will recommend that each hospital receive \$300 monthly, compared with \$250 paid monthly in 1940. The hoost was said to be necessary because of an increase from 9,000 to 14,000 in the number of tests made annually.

### Erie County

Emphasizing that no additional appropriation will be necessary, the county social welfare board on April 4 approved the revised medical plan for indigents which would compensate Buffalo physicians for their services.

The plan was submitted to the Board of Supervisors on April 8, and "prospects are bright for its passage," according to the *Buffalo Courier-Express*.

Under the proposed setup, private city doctors would receive a maximum of \$50 monthly for their services to welfare clients. Heretofore they have received no compensation. Home calls would bring them \$2 a visit and office calls, nothing.

Thirteen positions would be created by the proposal, including five staff doctors at \$1,560 annually for home call service and four pharmacists who would be assigned to Meyer Memorial Hospital dispensaries.

The program of the Buffalo Academy of Medicine on April 16 consisted of an analysis of

3,000 prescriptions written by physicians of western New York, compared with a similar analysis made six years ago.

Dr. Herbert C. Goetz, 46, a specialist in traumatic surgery, who had one of the largest medical practices in Buffalo, died on April 8.

One of the oldest physicians in the state, Dr. Robert Hebenstreit, aged 90, died on March 25, in Buffalo. Born in Schlussheldrung, Germany, Dr. Hebenstreit came to Buffalo in 1864 with his mother and father, who also was a doctor. In 1872 he received his medical degree from the University of Buffalo. One of the signers of the diploma was Millard Fillmore. He belonged to only one organization—the county medical society.

### Herkimer County

The county society met on April 8 at the Mohawk Valley Country Club. Dr. Edgar Burke, chief of surgery at the Jersey City Medical Center, gave an illustrated lecture on "Traumatic Abdominal Surgery." A buffet luncheon was served.

### Kings County

The scientific program at the meeting of the county society on April 15 was as follows: "The Surgical Aspects of Peptic Ulcer," Dr. Thomas A. Shallow of Philadelphia, "The Individual Physician's Obligation to Medical Organization," Dr. James M. Flynn of Rochester.

The second annual spring festival of the county society will be held during the week beginning May 12. There will be a hobby show of paintings, collections, and photography, and bowling and tennis tournaments.

The fifth concert of the Doctors' Musical Society of Brooklyn will be held on May 17 at 8:30 p.m. at the Brooklyn Academy of Music. A reception and dance will follow. The proceeds will go to the county society's relief fund.

The Associated Physicians of Long Island will hold their spring meeting on Tuesday, June 10, at the North Country Community Hospital, Glen Cove. Dinner will be held at the Nassau Country Club, Glen Cove, at 6:30 p.m. sharp. There will be short, snappy after-dinner speeches by Lieutenant Colonel William E. Lippold, U.S.A., Commander Ralph C. Kephart, U.S.N., and Bernard (Barney) Capehart, aviation expert of *Collier's*.

The Williamshurg Medical Society will meet at the Leon Louria Auditorium on May 12, at 9:00 p.m., for a symposium on headaches "Eye," Dr. Mark J. Schoenberg, "Ear, Nose, and Throat," Dr. Marvin F. Jones, "Neurology," Dr. Tracy Putnam, "Allergy," Dr. Matthew Walker, "Gynecology," Dr. Raphael Kurzkro, "Medicine," Dr. Tasker Howard.

Dr. Daniel A. McAteer, attending surgeon at St. Catherine's Hospital and past president of the county society, was guest of honor at a dinner in the Hotel Bossert on March 27. The

Dr David Hallock, Southampton  
Surgical treatment of peptic ulcers

## 3 Films

Wayne County

Dr James K Quigley, of Rochester, addressed the county society at the Wayne Hotel in Lyons, April 1, on "Problems in Everyday Obstetrics". A very interesting film on allergy was shown following dinner. The society was very pleased with the number of members present. Guests of the evening were Dr Paul A. Lembecke, District Health Officer, Dr E. Quinlevan, assistant, and Dr L. A. Whitney. —Reported by Joseph J Kaufman, M D

Westchester County

Colonel C M Watson, chief surgeon at headquarters, Second Corps Area, Governors Island, spoke at the meeting of the county society on April 15 in New York Hospital, Westchester Division, White Plains, on "Expansion of Some of the Medical Department Activities in the Army."

A meeting of the Westchester County Society of Gastroenterologists was held at the New York

Hospital, Westchester Division, in White Plains, on April 25. Dr Arthur J Patek, Jr., of the Research Division for Chronic Diseases at Welfare Island, was the guest speaker. Dr Patek's topic was "Treatment of Cirrhosis of the Liver by a Nutritious Diet Supplemented by Vitamin B Concentrates." Dr Carl Greene, of New York City, discussed Dr Patek's paper.

Dr Anthony Bassler, of New York City, a Fellow of the American College of Physicians, and president of the National Gastroenterological Society, was the guest speaker at a regular meeting of the New Rochelle Medical Society, at the New Rochelle Hospital on April 14. Dr Bassler's topic was "The Intestine and Chronic Arthritis."

The Special Committee on Cancer of the county society, under the chairmanship of Dr Margaret Loder, of Rye, arranged a special meeting in conjunction with the regular meeting of the Grasslands Hospital Staff, at Grasslands Hospital, April 30, on "Cancer of the Breast." Dr Frank E Adair, of the staff of Memorial Hospital in New York City, was guest speaker.

## Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
Joseph Balst	72	P & S N Y	April 13	Bronx
Judson F Browne	59	N Y Hom	April 5	Rochester
Edward P Donohue	65	Syracuse	March 26	Syracuse
Stuart J Fairbank	65	Hahne Phila	March 18	West Winfield
Israel L Feinberg	70	N Y Univ	April 13	Manhattan
Herbert C Goetz	46	Buffalo	April 8	Buffalo
Robert Hebenstreit	90	Buffalo	March 25	Buffalo
John H. Moss	54	Jefferson	March 30	Buffalo
Leo H. Neuman	72	Albany	March 15	Binghamton
Charles S Parker	53	Syracuse	March 28	Albany
Adam Schauf	75	P & S N Y	January 24	Kings Park
David Zelenko	59	P & S N Y	December 2	Centerport
				Brooklyn

## NEW HEALTH MOTION PICTURES

The State Department of Health has added to its collection of health motion pictures three new films

*Tuberculosis* is intended to develop general understanding and appreciation of the nature, prevention, diagnosis, and treatment of pulmonary tuberculosis. The processes of pulmonary infection and reinfection of the lungs are illustrated by animated photography, and tubercle bacilli, surrounded by body defense cells, are shown by photomicrography. Tuberculin tests and x-ray examinations are demonstrated along with hospital treatment, including pneumothorax. This film is recommended for use from the junior high school through the adult levels of instruction.

*Safety in the Home* presents graphically the rate and annual toll of home accident injuries. Attention is focused on the most common source of accidents in and about a typical home, and

suggestions are given for their elimination. Because of its objective nature and application to numerous courses of study, this production may be used from the intermediate grade level upward.

*Home Nursing in Pneumonia* (a revised version of *Pneumonia Nursing—Half the Battle*) shows a public health nurse instructing a housewife in the care of a pneumonia patient. This picture is adapted particularly for display before women's organizations, nursing classes, and adult audiences but is not suitable for mixed school groups.

Each of the three films is one-reel and is available in 16-mm. sound film only. They may be borrowed without charge, subject to the usual conditions. Requests should be addressed to the Bureau of Visual Instruction, at the State Department of Health in Albany, New York.

on each examiner. Also, our weekly session at the dispensary, where any board can send its men (up to twenty) to fill weekly quotas, is working well and keeps our boards well up in fulfilling the regular quotas. The present calls will be completed before July 1, when a letup for the summer is expected."

### Ontario County

Dr G Allen Robinson of New York City spoke on the "Present status of radiation therapy in malignant disease" with moving pictures on "Radium and its Therapeutic uses" at the scientific session of the county society meeting in the Clifton Springs Sanitarium on April 8.

The discussion was opened by Dr John J Morton, professor of surgery of the University of Rochester, and Dr Andrew H. Dowdy, assistant professor of radiology at the University of Rochester.

### Orleans County

The county society held a dinner meeting on March 27, at the Town Club, in Albion.

The County Department of Public Welfare had three representatives present to explain and discuss with the society the changes in the payment procedure for medical care given to recipients of old-age assistance, aid to the blind, and to dependent children, as required by the New York State Department of Social Welfare.

Dr Gordon Gray of the state health department office at Batavia spoke on the changes made in the treatment of luetic patients formerly cared for by welfare physicians, whereby each physician will now have the privilege of treating his own patient.

After the business meeting, Dr Ward Ekas, of Rochester, spoke on Maternal Welfare. A special invitation was extended to the society to attend the Maternal Welfare Teaching Day, at Rochester, April 9.—*Reported by Dr Ellen M Nicholson, Secretary*

### Oswego County

The spring dinner meeting of the county society was held at the Hotel Pontiac on April 3, with a large attendance of members and guests from neighboring counties. Dr Edward F Fox, of Fulton, presided.

### Queens County

Dr Leonard B Goldman, of Jackson Heights, a member of the speakers' bureau of the Queens Cancer Committee, gave an illustrated talk on "The Practical Aspects of Cancer" at a meeting of the Queens Medical Society in the Queens General Hospital, Jamaica, on March 27.

The address was followed by a tour of the radiation therapy department of the hospital.

The Health Department and the Queens Cancer Committee joined in sponsoring the session in connection with Cancer Information Month.

The Rockaway Medical Society held its monthly meeting on April 17, at the Lawrence Village Park Clubhouse. Dr Alfred F Calvelli presided.

Dr Clay R. Murray, associate surgeon at the Presbyterian Hospital, spoke on "Fractures in General Practice." A discussion was led by Drs I Reitzfeld and I Balensweig.

The society will hold its annual dinner dance in May at the club house.

### Rensselaer County

"Grudgingly commending Germany as the only power which heeded the health lessons of World War I, the president of the American Medical Association thinks it's high time Uncle Sam took the cue," says the Albany *Knickerbocker News*, in reporting the address on April 8 by Dr Nathan B Van Etten before the county society in the Hendrick Hudson Hotel, Troy. He said Britain scorned those lessons and France almost ignored them.

And now, because she took heed, said Dr Van Etten, Germany possesses a strong and virile youth.

Warning colleagues against being "lulled to sleep by stories of security," Dr Van Etten urged physicians to "emerge" from their shells and face the crisis.

"Defense against disease," he said, "is quite as important as defense against a military enemy."

During a question period Dr Van Etten announced that the jury decision in a District of Columbia local court holding the American Medical Association guilty of restraint of trade, will be appealed "unless the House of Delegates rules otherwise." The appeal will be carried through the highest courts of the land and

"If it is necessary we will carry it to the court of public opinion, to the people themselves," he said.

The American Medical Association, he set forth, is an educational institution which never has been in business or trade.

### Richmond County

Dr Henry H Rutter spoke at the April meeting of the county society in the Health Center, Stuyvesant Place, St George. His subject was "Fractures in General."

Dr Rutter is an associate in traumatic surgery and a surgeon to the Reconstruction Unit of Post-Graduate Hospital, and consulting surgeon in St. Luke's Hospital, both Manhattan.

The annual dinner of the society has been postponed to May 7. It will be held in the Meurot Club, St George. The society expects to have, as its honor guest, Dr Nathan B Van Etten, president of the American Medical Association.

### St. Lawrence County

The quarterly meeting of the county society was held April 17 at the Hepburn Hospital, Ogdensburg. Luncheon was served at the Crescent Hotel.

Dr Richard H Bennett, clinical professor of medicine, Brooklyn, spoke on "Pulmonary Hemorrhage."

### Suffolk County

The programs of the Hampton Clinical Society in April were as follows: Thursday, April 10 1 Fracture of Shaft of Femur, Dr Frank Holmberg, Sag Harbor 2 Fracture of Neck of Femur, Dr David Edwards, East Hampton 3 Films Elbow and Knee Surgery.

Thursday, April 24 1 Changes of temperature in extremities following ligation of artery or vein 2 Perforating ulcers of stomach and duodenum,

PROVIDE *the Arthritic Patient*  
*with* RELIEF FROM PAIN . . .

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A-B-M-C Ointment\* relieves arthritic pain because of its local action in increasing the blood supply to the affected part by dilatation of the arterioles and capillaries

In 88 percent of 96 patients studied, A-B-M-C Ointment provided relief from pain without any untoward effects when used as directed. No urticaria was produced in any case †

A-B-M-C Ointment is spread, without rubbing, on the affected part and heat is applied for 20 minutes

*Supplied in 1-ounce tubes*

†Archives of Physical Therapy 21:12 (Jan) 1940

\*A-B-M-C Ointment is a trademark of John Wyeth & Brother, Incorporated, for its brand of ointment containing Acetyl Beta Methylcholine Chloride 0.25%, menthol, thymol, eucalyptol and methyl salicylate in an emollient base.

SAMPLES AND LITERATURE ON REQUEST

*John Wyeth & Brother, Inc., Philadelphia*

# Hospital News

## Sawdust Beds for the Chronic Sick

THE fond relatives think at first that barbaric treatment is being extended to their loved ones. Sawdust beds! But they are surprised to learn that the loved ones actually like the beds and often ask to stay in them. And they make better progress, too, so that the families experience a sharp reversal of feeling.

Sawdust beds have been in use seven years in The Hamilton County Home and Chronic Disease Hospital in Cincinnati, and Miss Hadassah M. Hofmann, the matron, tells us about them in the *Modern Hospital* for March. She lists their good points thus:

### Their Advantages

"The advantages we have found in the use of sawdust beds may be summarized as follows:

"1 They are comfortable, and patients like them so well that they frequently ask to remain in the sawdust bed.

"2 They are cool in the summer and can be made warm and snug during the winter months.

"3 They serve to keep the open wards clean and to eliminate odors.

"4 They are economical because they save linen, laundry, medications, and dressings.

"5 They are labor saving, it is harder to change an entire bed and wash soiled linen than it is to remove a few scoops of sawdust and replace them with fresh sawdust.

"They were introduced as a routine procedure for the care of bedsores under the direction and supervision of the superintendent, Dr. Charles A. Neal, who is also active in public health and social welfare programs. At present there are twenty-four sawdust beds in constant use and they have given excellent results.

"The bed did not originate in our hospital. It is believed that sawdust beds were first used in an institution for the mentally ill somewhere in Indiana. They are being used in many other institutions with most gratifying results."

### Modus Operandi

Sawdust made from white pine or any soft wood is sifted to remove splinters, Miss Hofmann continues, and is placed evenly in the crib to the depth of about eight inches. A quilted pad or a folded draw sheet, twenty-five by thirty inches, is placed at the head end of the bed and the pillows are put on it. A sheet, a spread, and a blanket, if necessary, are placed on the bed as covering. These may be pinned or tied to the foot of the bed to prevent their slipping to the floor. The covers are fanfolded and the bed is ready.

The question of cleanliness may arise. The sawdust comes from the inside of boards, it is heated to a high degree of temperature in the process of sawing and is carefully handled, which makes it clean, if not free from bacteria. Taking everything into consideration it is as clean as an ordinary bed. The sawdust used is white pine or other soft wood because hard wood is irritating and walnut stains when the patient perspires.

The patient is placed directly upon the saw-

dust (no lower sheet is used) and is able to move from side to side as in an ordinary bed. A backrest or a chair used as a backrest may be placed in the bed during meal time or for a change of position. A wooden tray stand may be placed across the bed for the food tray at meal time, for writing, for handicraft work, or for any work the patient desires to do.

If the patient has an open lesion, it is washed daily or as often as is necessary with soap and warm water or with warm normal saline solution. Medications and dressings are not used because these would defeat the purpose of the sawdust beds. When the sawdust becomes soiled from wound discharges or excreta the patient is turned and the soiled sawdust is removed with a scoop or dustpan. The patient is then bathed as needed and fresh sawdust is put into the bed. The soiled sawdust is placed in an airtight galvanized container, the contents of which are later disposed of in the incinerator. A bed bath can be given as if the patient were on an ordinary bed.

## "Bringing up Father" in a Hospital Class

ADD one more to the number of hospitals that, not content merely to educate expectant mothers, are also educating expectant fathers, says the "Roving Reporter" of *The Modern Hospital* in the March issue. It is the Methodist Hospital in Brooklyn, "at which we are stopping for a few minutes to see what is being done to make the husband understand some of the problems that may confront a wife before the baby comes."

"We made the first approach," Mabel Duryea, supervisor of the maternity building, tells us, "through the wife in the mothercraft class, explaining just what we desired to do and why we desired to do it. We asked her to invite her husband for us, thus making the contact absolutely informal and entirely a matter between husband and wife, and removing any possibility of the husband's feeling that the hospital was urging something on him. We were delighted with the results."

"On December 4 at 8 P.M. we ventured out with a series of four classes, the first two of which were lectures, the last two, practical demonstrations. Fourteen attentive and interested expectant fathers were on hand. By their earnest attention and careful questions we knew the answer—such classes were needed."

"One of the attending doctors on the obstetrical staff gave the two lectures. The first was on 'the anatomy and physiology of pregnancy,' the second, 'tips to prospective fathers.' These were presented in terms that the husband could easily understand and were accompanied by interesting slides."

"The last two evenings of the course were practical demonstrations given by the instructor of mothercraft classes. The first was a demonstration bath and the second was on general care of the baby. The instructor gave a demonstration bath to a doll, explaining the various steps in

[Continued on page 1014]

PROVIDE *the Arthritic Patient*  
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†Archives of Physical Therapy 21:12 (Jan.) 1940

\*A-B-M-C Ointment is a trademark of John Wyeth & Brother, Incorporated for its brand of ointment containing Acetyl Beta Methylcholine Chloride 0.25%, menthol, thymol, eucalyptol and methyl salicylate in an emollient base.

SAMPLES AND LITERATURE ON REQUEST

*John Wyeth & Brother, Inc., Philadelphia*

[Continued from page 1012]

detail and then showing how the baby should be diapered and dressed

"These demonstrations were staged to teach the husband to be helpful but not to attempt to do more than he knew how to do well. Special emphasis was given to preparing and giving the bottle and the proper procedure following the feeding of the baby. The demonstration of the 'general care of the baby' was a review that afforded each husband who desired it an opportunity to practice on the doll the procedure that had been demonstrated.

"A certificate was presented to the men who completed the course, and it was extremely gratifying to see how pleased they were to receive this certificate. They were treated to refreshments consisting of coffee and cakes, too."

Already another class is under way, with every indication of increasing registration as prospective fathers become educationally minded.

### Newsy Notes

AS A precaution against the possibility of bombing raids, the board of managers of Meyer Memorial Hospital in Buffalo has directed the institution's architects to prepare sketches for a bombproof, self-contained unit in the basement.

Dr. Walter S. Goodale, hospital superintendent, said that without any alteration in the contour of the buildings, the basement could be bombproofed and set up as a self-contained unit for a comparatively small amount of money.

"These alterations would involve air-conditioning of the basement, transfer of the kitchen and storerooms from upper floors, and shifting of some of the present basement activities to other parts of the hospital," Dr. Goodale said. "Most of the utility departments already are located in the basement."

The superintendent has received a communication from Dr. Arnold F. Emch, assistant secretary of the American Hospital Association, pointing out that hospitals in zones of combat must be provided with bombproof shelters and first-aid rooms, decompression chambers, and facilities for treating gas victims.

In anticipation of the hardship which military service will inflict on the families of doctors who are reserve officers, the medical staff of Mount Sinai Hospital has adopted a plan whereby the entire staff shares the financial burden of members called to service.

Under this plan, developed by members of the Medical Board and the Association of the Junior Medical Staff, all staff members who remain in civilian practice will contribute a percentage of their income to a common fund to help the families of those called to service.

Three trustees will control the fund, and administrative costs will be defrayed by the hospital.

Justice Francis G. Hooley, in Queens Supreme Court, set aside on March 21 the election on March 3 of new officers and directors of Flushing

Hospital and held the original slate of officers and all but four of the trustees to be the legal directors of the hospital. At the March 3 meeting a group of newer members of the association passed two bylaws and, acting on them, increased the number of trustees from twenty to twenty-seven, elected fourteen new members to the board, and displaced L. Gale Hunter as president by George K. Weldon.

The older trustees took the fight to court, contending that the passage of new bylaws without previous notice was contrary to the constitution and bylaws of the hospital association. Justice Hooley upheld this contention.

The William Hempstead Post, V. F. W., has presented an iron lung to the Ilion Hospital.

The Huntington Lodge of Elks has given a fracture table to the Huntington Hospital.

After eighteen years of service in and about Amityville, the Reed General Hospital in that village has been closed. Its founder and proprietor, Dr. Theodore D. Reed, who is also a coroner of Suffolk County, is serving as a captain in the Army Medical Corps at Fort Hancock, New Jersey. The hospital has operated as a nonprofit, nonsectarian, charitable institution, and had been operated at a deficit for many years, Dr. Reed said.

The Assembly Ways and Means Committee has killed a bill for an appropriation of \$750,000 for construction of a state cancer hospital in Utica, according to an Albany news dispatch.

"The amount of hospital facilities per unit of population continues its steady increase, the demand per unit of population likewise is growing," the Council on Medical Education and Hospitals of the American Medical Association reports in its twentieth annual presentation of hospital data, published in the *JAMA* for March 15.

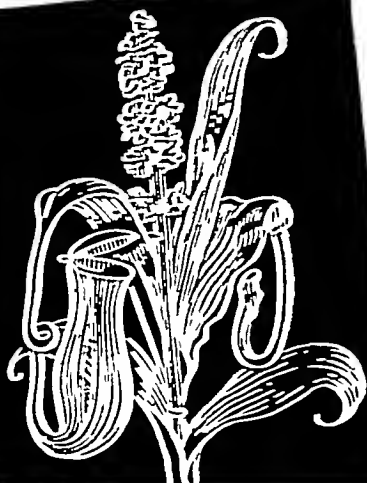
"The total number of beds now available in registered hospitals," the report states, "is 1,226,245, an increase of 31,219 beds, which is the equivalent of an 85-bed hospital for each day of last year, Sundays and holidays included, not forgetting it was leap year. The total number of registered hospitals is 6,291, an increase of 65 during the year. The average census of patients was 1,026,171."

### Improvements

GOVERNOR Lehman has urged the Legislature to approve submission of a \$50,000,000 bond issue to the electorate next fall to finance additional mental hospital construction.

The proposal, recommended by the state commission to formulate a long-range health program, was supported by the Governor be-

[Continued on page 1016]



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Address.....

City.....State.....

[Continued from page 1014]

cause "there seems to be no other way of caring for the insane patients for whom the state is responsible"

The executive also asked adoption of other commission recommendations to postpone demolition of Manhattan State Hospital, Ward's Island, from 1943 to 1948 and appropriate \$200,000 for repairing it

The Governor explained under the present state building program the estimated overcrowding in state mental hospitals by 1946 would be 20 5 per cent, or a shortage of about 15,000 beds

WPA improvement projects under way at four Queens hospitals—Neponsit Beach, Creedmoor State, Triborough, and Queens General—are being speeded up as spring brings favorable weather for outside construction work and improvement of grounds, Raymond C Branton, Acting WPA Administrator for New York City, announces

The projects, to be completed at an estimated combined cost of \$1,240,000, will provide better accommodations and more pleasant surroundings for thousands of crippled children, tuberculosis sufferers, mental cases, and many other types of patients at the four hospitals, as well as for the staff

Millard Fillmore Hospital, Buffalo, contemplates building an addition.

Corning Hospital's facilities have been expanded by the addition of seven single rooms in the west wing of the first floor

Plans for a new \$1,250,000 seven-story hospital building as part of the New York Post-Graduate Medical School and Hospital are announced by

Dr Arthur F Chace, president of the board of directors

The building will house additional x-ray laboratories, classrooms, and clinics to accommodate an overflow under which the hospital has been operating It is scheduled to open in May, 1942

Archbishop Francis J Spellman laid the cornerstone on March 19 for the proposed nine-story pavilion that will adjoin St Vincent's Hospital in New York City and increase its bed capacity to 600

Former Governor Alfred E Smith, presiding later at exercises in the hospital auditorium, told 500 friends of the institution that he had been "very nervous" during the laying of the stone

"I was afraid," he said, "that the walking delegate of the bricklayers' union would come along and ask our Archbishop for his union card. But we seem to have gotten away with it."

The drive for \$50,000 to construct an addition to the Julia Butterfield Memorial Hospital at Cold Spring has reached its goal The wing will double the bed capacity of the institution

Veterans' organizations, chambers of commerce, civic and other groups are backing Representative E Harold Cluett in his efforts to secure a \$4,000,000 veterans' hospital for the twenty-ninth New York district Troy is making a strong bid for it

Leased from Columbia University, the structure at 500 West Fifty-Seventh Street, which formerly housed the Herman Knapp Memorial Eye Hospital, was dedicated on March 27 as the city's newest private hospital. Completely renovated, the hospital, to be known as the New Amsterdam Hospital, has been leased by a group of physicians

## CHARACTERISTICS OF QUACKS

One of the characteristics of the quack in the field of medicine is his attempt to camouflage his ignorance by quoting the writings of reputable physicians and trying to make it appear that his work and that of the ethical physician is one and the same thing, Dr Richard B Phillips, Rochester, Minnesota, points out in the March issue of *Hygeia, The Health Magazine*.

Other characteristics by which the quack may be identified are summarized by Dr Phillips as follows "The quack lets everyone know that he is in town by large letter advertising in newspapers, circulars, etc Although he is quick to criticize organized and ethical medicine, he adopts the dress, office equipment, and titles of

the profession in so far as he is able He hands out literature that is ostensibly scientific and attempts to confuse and bewilder the 'sucker' with pseudoscientific statements He presents, as a method of cure, something that is easy and simple to take and surrounds this nostrum with an aura of magic and mystery He always promises a definite cure in a definite time and usually with a definite number of treatments He is always exceedingly positive and direct in answering questions, and his sureness of manner often disarms the intended victim In cases in which an ethical physician will often admit that there is some doubt about a given situation, the quack is always positive and definite"

# INDEX TO ADVERTISERS AND ADVERTISED PRODUCTS

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\* Treatment of Leukorrhea with Ozonide of  
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of Medicine, Vol. 41, Jan 15, 1941

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# Maternal Welfare

*At the Erie County Medical Society's meeting on March 17, 1941, its Committee on Maternal Welfare for 1940 gave the report printed below*

## REPORT OF MATERNAL MORTALITY COMMITTEE—1940

The Obstetrical Council has completed the study of Maternal Mortality in Buffalo for 1940. This marks the fifth consecutive year of its work. The Committee feels that its work has been gratifying and presents the following report to the County Society.

After careful investigation we have found that there were 43 maternal deaths in 10,548 deliveries, an incidence of 0.4 per cent. This compares favorably with our good record of last year and shows a decided improvement over 1935 and 1936, during which years there were 63 and 69 maternal deaths in the same number of deliveries. Excluding the Abortions and Extra-uterine pregnancies, the number of obstetrical deaths would then be reduced by 12 to 31.

Concerning the causes of death we find that Infection, Hemorrhage, and Toxemia still rank the highest. Infection was responsible for eight

deaths or 18.6 per cent. Of these eight deaths, six, or three-fourths of them, occurred in the Cesarean Section group, and two occurred in the Spontaneous deliveries. These results only emphasize the past warnings of the Obstetrical Council in their previous reports that Cesarean Section should be looked upon as a serious operation, carrying with it a much higher incidence of both morbidity and mortality and that this type of operative delivery should be limited to a small group with very restricted and well-defined indications.

Toxemia was the cause of death in seven cases, an incidence of 16.3 per cent. Prenatal care was introduced with the distinct purpose of reducing the deaths from toxemia. It was felt that proper prenatal care would reduce to a minimum this number. We have apparently made only little progress toward this end as proportionately there

TYPES OF DELIVERIES			
SECTIONS		16	37.2%
1 Low	8		
2 High	5		
3 Porro	3		
SPONTANEOUS		7	16.3%
VERSION AND EXTRACTION		3	7.0%
BREECH		2	4.6%
FORCEPS		2	4.6%
ABORTIONS		7	16.3%
EXTRA-UTERINE PREGNANCY		5	11.6%
POSTMORTEM SECTION		1	2.3%
TOTAL		43	99.9%

CAUSES OF DEATH			
INFECTION	8	18.6%	
TOXEMIA	7	16.3%	
HEMORRHAGE	6	14.0%	
EMBOLI	6	14.0%	
ACCIDENTS OF PREGNANCY AND LABOR	4	9.5%	
ABORTIONS	7	16.3%	
EXTRA-UTERINE PREGNANCY	5	11.6%	
TOTAL	43	100.0%	

### CAUSES OF DEATH AND TYPES OF DELIVERIES

1 INFECTION	8
Sections	6
Spontaneous	2
2 TOXEMIA	7
Sections	4
Spontaneous	1
Forceps	1
Breech	1
3 HEMORRHAGE	6
Version and Ext.	3
Spontaneous	1
Breech	1
Section	1
4 EMBOLI	6
Spontaneous	3
Sections	3
5 ACCIDENTS OF PREGNANCY AND LABOR	4
Sections	2
P. M. Section	1
Forceps	1
6 ABORTIONS	7
7 EXTRA-UTERINE PREGNANCY	5
TOTAL	43

RECORD OF POSTMORTEM EXAMINATIONS, 1940			
Number of Deaths	43		
Postmortem Examinations	14	32.4%	

### MATERNAL MORTALITY, 1940

City of Buffalo			
	Deliveries	Maternal Deaths	Percentage
1935	10,075	63	0.006
1936	9,753	69	0.007
1937	9,917	44	0.004
1938	10,393	59	0.0056
1939	9,943	43	0.004
1940	10,548	43	0.004

### INCIDENCE OF OBSTETRIC DEATHS

### ANALYSIS OF DELIVERIES—CITY OF BUFFALO, 1940

NORMAL	6,509
FORCEPS	3,089
VERSION AND EXTRACTION	531
BREECH EXTRACTION	185
CESAREAN SECTION	234
TOTAL	10,548

Type of Delivery	Total in City	Deaths	Incidence
NORMAL	6,509	7	0.1%
FORCEPS	3,089	2	0.06%
VERSION AND EXTRACTION	531	3	0.56%
BREECH EXTRACTION	185	2	1.1%
CESAREAN SECTION	234	16	1.8%

(Continued on page 1020)

# Hospitals and Sanitariums

## Institutions of Specialized Treatments

### QUANTITY AND QUALITY

HOW MANY sanitariums in these United States? Perhaps the medical profession is not quite as interested in quantity as in quality, but quantity is often the yardstick of quality, opinions to the contrary notwithstanding. The very fact that there are so many private institutions able to operate during a period still far from prosperous surely is evidence that the sanitariums measure up to a standard of value acceptable to physicians and their patients.

The United States seems well taken care of with institutions maintained to care for the sick and the injured. As of the beginning of 1941, the record (from Ponton's *Dun & Bradstreet Statistics*) shows 8,867 hospitals and

sanitariums of all classes. Over forty-three per cent, or exactly 3,841 of this total, are sanitariums.

Taking first the entire field of institutions, we find that the New England States have 814, the Middle Atlantic States 1,846, the Middle Western States 1,654, the Western States 1,632, Pacific Coast States 1,048 and the Southern group of States have 1,873. Excluding hospitals, we find that sanitariums in the sub-divisions of the country number 398 in New England, 930 in the Middle Atlantic States, 704 in the Midwest, 484 in the Western States, 445 on the Pacific Coast and 880 in the South.

In New England the division between hospitals and  
(Continued on page 1021)

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Literature on Request

ESTABLISHED 1889  
THEODORE W. NEUMANN, M.D., Phys-in-Chg  
CENTRAL VALLEY, Orange County, N. Y.

Continued from page 1018]

are as many deaths in this group as there were in previous years. The last two years have shown a decided increase over previous years and the Committee feels that greater effort should again be made to educate the laity to the benefits of proper prenatal care.

Our study shows that over half of the toxemic deaths had inadequate or no prenatal care. Five out of seven cases got to the convulsion stage before treatment was instituted. It is a well-known fact that toxemic patients are problem cases regardless of the type of treatment, and our only hope is to prevent them from reaching the convulsion stage. The Committee feels that there has been a laxity in maintaining the educational program and advises that proper measures be taken toward further improvement of this condition.

The Committee also felt it necessary to call attention to the fact that five out of seven cases were delivered by operative measures. Of these, four were by Cesarean Section. In all of these deaths the Committee criticized the method of delivery as it felt that insufficient attention was given to the treatment of the toxemia. As a matter of fact, one of these patients had convulsions on the way to the operating room and also on the operating table. There can be no question that a patient in this condition is not a candidate for major surgery. In this group the indication for Cesarean Section had been widened in order to facilitate quickly a delivery. As a supposed life-saving measure in this group of cases it turned out to be the opposite.

Hemorrhage occurred in six cases, an incidence of 14 per cent. The Committee criticized severely the lack of transfusions. In several instances it was felt that transfusions may have saved a life. In previous years the Committee urged the establishment of blood banks in order

to overcome the difficulties in obtaining blood. Several of the hospitals have banks. Others should start them. The Department of Health, with its laboratories, are in a position to have blood in a central station available to both hospitals and private physicians for delivery in the home. If this is not possible then the hospitals with blood banks should offer this service to all outside cases.

Embolism occurred in six cases, an incidence of 14 per cent. These are accidental deaths and in many instances not preventable. Three cases occurred in spontaneous deliveries and three in Cesarean Section.

Abortion and Extra-uterine pregnancies were responsible for twelve deaths. All of the abortions were self-induced or criminal and all died of infection. The Extra-uterine deaths were due to hemorrhage and shock and infection. Both of these causes of death are maternal but not obstetric.

Concerning the methods of delivery, the Committee wishes to point out that Cesarean Sections accounted for sixteen deaths or 37.2 per cent. Excluding the deaths from Abortions and Extra-uterine pregnancies, Cesarean Sections accounted for 50 per cent of the obstetrical deaths. Every report for the past five years has called attention to the dangers of Cesarean Section. This is a hospital problem and can be controlled by them. The County Society can take it upon itself to urge the hospitals to supervise more closely their operating rooms as well as to require consultation before Cesarean Sections are done. In this way its widespread use can be controlled and limited to recognized indications.

In 1940 postmortem examinations increased to 32.4 per cent. The Committee wishes to impress upon all practitioners the need for autopsies so that each case can be carefully evaluated.

## TOXEMIA, 1940

Prenatal Care	Labor	Convulsions	Delivery	Cause of Death
1 Inadequate	2 hrs.	None	Spontaneous	Pneumonia
2 Inadequate	0	Yes	Section	Eclampsia
3 None	0	Yes	Undelivered	Eclampsia
4 Adequate	0	Yes	Section	Eclampsia
5 Inadequate	0	Yes	Section	Acute liver atrophy
6 Adequate	8 hrs	Yes	Forceps-Breech	Eclampsia
7 Adequate	8 hrs	None	Section	Infection

## SUMMARY

Adequate Prenatal Care	3
Inadequate Prenatal Care	4
Convulsions	5
No Convulsions	2
Operative Delivery	6
Nonoperative Delivery	1
Undelivered	1

## METHODS OF DELIVERY

		6-Year Summary						Total
		1935	1936	1937	1938	1939	1940	
1	SPONTANEOUS	7	11	9	10	11	7	55
2	FORCEPS	3	6	2	8	3	2	23
3	VERSION AND EXTRACTION	5	10	4	7	4	3	33
4	BREECH EXTRACTION	2	2	1	3	0	2	10
5	CESAREAN SECTION	21	18	12	11	10	18	88
6	ABORTIONS	16	8	9	15	8	7	63
7	EXTRA-UTERINE PREGNANCY	7	3	3	2	3	5	25
8	UNDELIVERED	4	2	4	3	4	1	18
TOTALS		65	61	44	59	43	43	316

[Continued on page 1022]

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sanitariums is practically even. In the Middle Atlantic region there are more sanitariums than hospitals. In the Midwest and the South the division is fairly even also. In Western and Pacific Coast States the hospitals are a decided majority.

If size of the institutions means anything, the following break-down may be interesting. Covering both hospitals and sanitariums, there are 3,467 (close to half the total) with less than twenty-five beds. More than half have over twenty-five beds. Of this number (5,395) about sixty per cent have more than fifty beds. Only 1,930 institutions have more than 100 beds.

Of the largest institutions, with over one hundred beds, the Middle Atlantic States (New York, New Jersey,

Pennsylvania, Delaware, Maryland, and the District of Columbia) have practically thirty per cent, 569 in all. Of the smallest size institutions, the Western States (Minnesota, Iowa, Missouri, Kansas, Nebraska, North and South Dakota, Colorado, Montana, New Mexico, Wyoming, and Oklahoma) have the greatest total, some twenty per cent (701). The Southern region and the Middle Atlantic States combined have over forty per cent of the nation's hospitals and sanitariums with more than twenty-five beds.

Analyzing our own State of New York, we noted that naturally as in so many things it has the most hospitals and sanitariums of any state in the Union. Its 624 insti-  
(Continued on page 1025)

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[Continued from page 1020]

## MATERNAL MORTALITY STUDY—CITY OF BUFFALO, 1940

## 6-Year Summary

## CAUSES OF DEATH

	1935	1936	1937	1938	1939	1940	Total
1 PUERPERAL SEPSIS	20	17	13	11	11	8	80
2 HEMORRHAGE	10	6	9	11	8	6	50
3 TOXEMIAS	2	7	2	4	10	7	32
4 EMBOLISM	2	5	2	6	0	6	21
5 ACCIDENTS OF PREGNANCY	5	5	6	10	3	4	38
6 ABORTIONS	16	6	0	15	8	7	61
7 EXTRA-UTERINE PREGNANCY	7	5	3	2	3	5	26
8 SURGICAL SHOCK	3	10	0	0	0	0	13
TOTALS	65	61	44	59	43	43	315

## CESAREAN SECTIONS, 1940

Indication	Hours of Labor	Ruptured Membranes	Vaginal Examn	Operation	Cause of Death
1 Dystocia	72	50 hrs	?	Porro	Infection
2 Dystocia	54	14 days	0	Low	Embolus
3 Dystocia	48	0	0	Low	Infection
4 Dystocia	43	43 hrs	9	Low	Infection
5 Dystocia	30	30 hrs	4	Low	Anesthesia
6 Previous Section	24	0	0	Porro	Rupt Uterus
7 Dystocia	12	0	0	Low	Infection
8 Eclampsia	8	3 1/2 hrs	1	High	Infection
9 Eclampsia	0	0	2	High	Toxemia
10 Eclampsia	0	0	0	Low	Toxemia
11 Eclampsia	0	0	1	High	Acute Atrophy of Liver
12 Previous Section	0	0	0	High	Infection
13 Previous Section	0	0	1	High	Infection
14 Heart Disease	0	0	2	Porro	Infection
15 Dystocia	0	5 hrs.	0	Low	Embolus
16 Elderly Primipara	0	0	0	Low	Embolus

## SUMMARY

Indications	Operations	Causes of Death
Dystocia	7	Infection 8
Previous Section	3	Toxemia 3
Toxemia	4	Embolism 3
Heart Disease	1	Rupt. Uterus 1
Elderly Primipara	1	Anesthesia 1

## Conclusions

In conclusion, the Committee would like to emphasize the following

- 1 The seriousness of Cesarean Section
- 2 The importance of proper Prenatal care
- 3 The conservative treatment of Toxemias of pregnancy Toxemic patients are not good candidates for surgery
- 4 The importance of blood banks

The Committee wishes to express its thanks to Dr Robert C McDowell for his conscientious work as investigator for the Committee. The Committee also wishes to acknowledge its debt of gratitude to Dr Francis E Fronczak, the Board of Health, and the Bureau of Vital Statistics of the City of Buffalo, without whose encouragement and assistance these records could not have been compiled.

## LECTURES ON TROPICAL MEDICINE

A course of lectures on recent advances in tropical medicine, on May 19 to 23, is announced by the New York Post-Graduate Medical School to be under the direction of Dr Z Bercovit. Lectures will be given on malaria, yellow fever, intestinal parasites (Helminths), filariasis, amebic dysentery, bacillary dysentery, tropical skin diseases, kala azar, leptospirosis, relapsing fever, rat-bite fever, trichinosis, echinococcus, deficiency diseases, lymphogranuloma venereum, sanitary engineering, and tropical hygiene.

The purpose of this course is to bring to phy-

sicians a review of the fundamentals of the various subjects in tropical medicine and the more recent advances that have come from research. To this end arrangements have been made to have authorities in their respective fields give lectures and demonstrations in their specialties. Clinical and laboratory material is available for study and demonstration, and the students are given an opportunity for practical work in clinical parasitology.

The fee will be \$50. Applications should be addressed to The Director, 309 East 20th Street, New York City.

(Continued from page 1021)

tutions comprise seven per cent of all the hospitals and institutions in the country. California is a close second with 571 institutions, Pennsylvania third with 415, Texas fourth with 401, Massachusetts fifth with 393, Illinois sixth with 352, Ohio seventh with 327, Michigan eighth with 299, Wisconsin ninth with 267 and Minnesota a close tenth with 266.

The surprising showing of Texas is largely due to its predominantly great number of small institutions. Almost a half of its total is made up of hospitals and sanitariums having less than twenty-five beds. Delaware has the smallest number of institutions of any state with only 17 listed. New York State has over 75 per cent as many hospitals and sanitariums as New England.

## NATIONAL DEFENSE

UNDER THE GLAMOUR of training men to defend our "ray of life" with lethal weapons, it is easy to forget that there are other necessities for training to enjoy "life, liberty and the pursuit of happiness."

We hear much these days about "technicians" in a military sense, but even less than before about the civilian technician so important for the defense of the Magnot, Segined and other lines of our own little worlds. The schools that are training men and women for the battle stations of the hospital laboratories and pharmaceutical research departments are doing as much to make our nation invincible as are the great strategists of our army and naval departments. This may seem a trite statement, but it is nevertheless one that can bear repeating again regardless of the seriousness of the times.

Schools must mean something more than just training for a career. The fundamental purpose should be to create a stronger nation mentally and physically. It has been said that too much intelligence is dangerous. What

in hospitals exclusively, California takes the lead with 288, thirty-eight more than New York State. Pennsylvania and Minnesota are third and fourth in this classification with 233 and 213 respectively. Ohio comes next with 191 and Iowa sixth with 182. Next in order are Illinois with 176, Texas with 175, and Michigan and Massachusetts with 164 each.

Greater New York has 230 institutions, 149 hospitals, and 81 sanitariums. Compared with states this is practically as many institutions as New Jersey and more than thirty-five other states of the Union.

With 374 sanitariums in New York State, 81 of them within the city limits, physicians of this State are amply supplied with sanitarium facilities.

the corner of this phrase really should have said is "that too much *misguided* intelligence is to be feared."

This we have witnessed for the past several years in the actions of the dictators—that is if we can classify the warped thinking of such individuals as an "intelligence." The story of the early life of a Hitler reveals that what the future world has to be guarded against is misguided beginnings.

It is probably beside any point to expect the medical profession to shoulder the entire burden of the responsibility of charting the destinies of younger generations, but there is much a physician can do without going out of his way to help maintain the "status quo" of the "American way of education."

By recommendation he can encourage the fine work of specialized schools. By reference and by employing whenever possible the graduates of such schools, he can encourage students to continue in such studies as well as others to become serious students.

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See page 1025

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# Books

Books for review should be sent to the Book Review Department at 1313 Bedford Avenue, Brooklyn N Y. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and interest to our readers.

## RECEIVED

**Natural Resistance and Clinical Medicine** By David Perla, M D, and Jessie Marmorston, M D. Quarto of 1,344 pages. Boston, Little, Brown and Company, 1941. Cloth, \$10.

**Malignant Disease and Its Treatment by Radium.** By Stanford Cade, F.R.C.S. Quarto of 1,280 pages, illustrated. Baltimore, Williams & Wilkins Company, 1940. Cloth, \$10.

**Hutchinson's Food and the Principles of Dietetics.** Revised by V H Mottram, M.A., and George Graham, M D. Ninth edition. Octavo of 648 pages, illustrated. Baltimore, Williams & Wilkins Company, 1940. Cloth, \$6 75.

**Textbook of Medicine.** By Various Authors. Edited by J J Conybeare, D M. Oxon. Fifth edition. Octavo of 1,131 pages, illustrated. Baltimore, Williams & Wilkins Company, 1940. Cloth, \$7 50.

**Schizophrenia in Childhood.** By Charles Bradley, M D. Octavo of 152 pages. New York, Macmillan Company, 1941. Cloth, \$2 50.

**The Mask of Sanity. An Attempt to Reinterpret the So-called Psychopathic Personality.** By Hervey Cleckley, M D. Octavo of 298 pages. St. Louis, C V Mosby Company, 1941. Cloth, \$3 00.

**Science and Seizures. New Light on Epilepsy and Migraine.** By William G Lennox, M.D. Octavo of 258 pages. New York, Harper & Brothers, 1941. Cloth, \$2 00.

**Infantile Paralysis.** Edited by W L Colze. Volume A40 of the *International Bulletin for Economics, Medical Research, and Public Hygiene*. Octavo of 179 pages, illustrated. New York, National Foundation for Infantile Paralysis, Inc., 1939-1940. Paper.

**Roentgen Interpretation.** By George W Holmes, M D, and Howard E Ruggles, M D. Sixth edition. Octavo of 364 pages, illustrated. Philadelphia, Lea & Febiger, 1941. Cloth, \$5 00.

## REVIEWED

**The 1940 Year Book of Industrial and Orthopedic Surgery.** Edited by Charles F Painter, M D. Duodecimo of 484 pages, illustrated. Chicago, The Year Book Publishers, 1940. Cloth, \$3 00.

Although the title of this work is *Industrial and Orthopedic Surgery*, the reviews on industrial surgery take up the greater portion. The book gives the abstract of some 276 papers published in the recent past. Most of the papers pertain to industrial surgery, and a small portion is devoted to abstracts of papers dealing with general orthopedics.

It is of value to the surgeon who has no time to read current periodicals, which applies to most surgeons. It is recommended particularly to those who do industrial and traumatic surgery. There is not enough review of orthopedic literature to benefit the orthopedic surgeon.

J B L'EPISCORO

**Applied Pharmacology.** By Hugh A. McGugan, M D. Octavo of 1914 pages, illustrated. St. Louis, The C V Mosby Co., 1940. Cloth, \$9 00.

This book thoroughly covers the subject of pharmacology, which, as the author states, "is the scientific basis of therapeutics." It presents the material in a logical way connecting physiology, biochemistry, and pharmacology with the clinical application as the ultimate goal. The early chapters are devoted to a consideration of the theories and modes of pharmacologic actions, absorption, conditions modifying the action of drugs, the classification of drugs and the pharmacopoeias. Then follows the pharmacology of the skin, the heart and circulation, and so on through the various systems. Under each will be

found drugs most used for various disorders. Anaphylaxis and allergy, the chemotherapy of syphilis, the vitamins and hormones are but a few of the important topics considered. It is a valuable book for those who are interested in modern pharmacology and its application.

FREDERICK SCHROEDER

**The Medical Clinics of North America.** November, 1940. Volume 24, Number 6 (Philadelphia number). Octavo. Illustrated. Philadelphia, W B Saunders Co., 1940. (Six numbers a year). Cloth, \$16 net, paper, \$12 net.

For those who want to refresh their memory or once and for all stamp in their mind the essential facts about arthritis in all its aspects, this volume will be a great boon. Almost 100 pages are devoted to this common disease alone.

In addition, Rowntree discusses Addison's disease, and Flippin summarizes his good work on chemotherapy in pneumonia.

ANDREW M BABET

**Progress in Medicine. A Critical Review of the Last Hundred Years.** By Iago Galdston, M D. Octavo of 347 pages. New York, Alfred A. Knopf, 1940. Cloth, \$3 00.

Dr Galdston, the educational director of The New York Academy of Medicine, reviews medical progress during the past century. Written in a warmly human tone, the emphasis is on the ideas underlying developments in bacteriology, nutrition, psychiatry, and internal medicine. At the same time Dr Galdston places full emphasis on the social relations and responsibilities of medicine.

GEORGE ROSEN

# NEW YORK STATE JOURNAL OF MEDICINE

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## *Editorial*

### Medicine on the Air

During the One Hundred and Thirty-fifth Annual Meeting of the Medical Society of the State of New York in Buffalo, radio played a significant part. Cooperating wholeheartedly in a program of regional education, radio stations WKBW, WBNY, WBER, and WBEN gave freely of their time and extensive facilities. The Committee on Radio of the Erie County Medical Society had organized and carried out a varied program of radio talks on matters of scientific and general interest, including a public forum meeting on Wednesday, April 30, with the following addresses: "The Doctor at War," by Dr. Nathan B. Van Etten, president of the American Medical Association, and "How to Live Longer," by Dr. James M. Flynn, president of the Medical Society of the State of New York, and was concluded with the forum "How's Your Health," in which questions from the audience of five hundred people

were discussed and answered by members of a panel of eleven physicians of Buffalo.

WBEN, the Buffalo NBC station, re-broadcast by transcription on successive Sundays from 4:00 to 4:30 P.M. the State Society's program, "Doctors for Defense," originally broadcast by WMCA, New York City. Altogether, Buffalo radio stations devoted two hours and fifty minutes to this program which the Radio Committee of the Erie County Medical Society adapted successfully and skillfully to the exacting demands of radio technique.

The Medical Society of the State of New York can well be proud of such a demonstration of well-organized radio coverage of the meeting and is deeply appreciative of the courtesy of NBC's station WBEN for its generous donation of time for the rebroadcast of "Doctors for Defense."

### A Good Veto

Again the medical profession and the people of the State of New York have reason to applaud the good sense and sound judgment of Governor Herbert H. Lehman for his veto of Mr. Quinn's bill, Assembly Int. 167.

This bill was "An act to amend the civil practice act, in relation to permitting disclosure by physicians and nurses of

professional information in certain cases." The bill would allow doctors and nurses to disclose confidential information obtained in their professional capacities to any state or local investigating committee.

In spite of the expressed disapproval of the Medical Society of the State of New York and the Medical Society of the County of New York, and under protest

of the Committee on Legislation of the Bar Association of the City of New York, the bill passed both houses of the Legislature. There was never any uncertainty or division of opinion on the part of medical men of this state on the harmfulness of this measure. The Committee on Legislation of the Medical Society of the County of New York, as well as the Coordinating Council of the five county medical societies of Greater New York, have gone on record as disapproving the bill, and the Legislature was well aware of this attitude of the medical men of the state.

In spite of this information and knowledge, the bill was passed. Why? There are always reasons for actions. They do not simply occur. Perhaps in this case the Legislature passed the bill feeling that the Governor would veto it. Why then pass it? As a gesture of good will to some pressure group? Politics makes strange bedfellows! Who was in bed with the boys this time? Not the Bar Association or the Medical Society of the State of New York! Well, then, what group might possibly desire "legislative investigation by the State or a political subdivision thereof"? Could it be the state medicine men who sleep with their boots on, the horny, hairy socializers who would welcome such a weapon as the "legislative

investigation" for their state-control blitzkrieg since the Sullivan law denies them the more usual armament of the snipers and finger-men?

We ask the people of the State of New York why the Legislature, judging from its actions, desires to parade the people's confidential disclosures to their physicians, their pitiful frailties and human failings across the thumb-marked pages of legislative investigations? Is this a decent respect for the constituencies which elected them? We ask the people to think about these actions. To think about them in the light of what might be expected under a system of compulsory "health" insurance, the very name of which is a political deception, an expensive vote-catching subterfuge, the real nature of which is a sickness tax. Think about this, wage-earner, you who toil by the sweat of your brow, you the people.

After you have considered, join with the medical profession of the State of New York in praise of the courage and honesty of Governor Lehman who has used the veto power again in behalf of the preservation of the individual rights of the people, rights contemptuously trodden under foot by the Legislature when it passed the Quinn bill as its last full measure of devotion to state socialism.

## The Deepening Shadows

"In the shadows that are deepening over Europe, the lights of learning are fading one by one. The conception of knowledge as an international responsibility has vanished. The free flow of ideas across boundary lines between laboratories and universities has dried up. Everywhere the exigencies of the war have erased the possibility of intellectual and cultural life as that term was understood a few years ago.

"For an organization like the Rockefeller Foundation to sit by and watch the disappearance or decadence or, worse, the perversion of institutions of learning which in earlier and better years we were

privileged to assist is not an easy assignment. These institutions gave high promise in public health, in medicine, and in the natural and social sciences in a world in which thought was free.

"Even more difficult is it to see the brilliant men with whose work we were associated now driven from the posts for which they were trained, debarred from their laboratories, some of them fugitives, some in concentration camps, many of them separated from their families or lost in foreign countries where they sought haven. To these scholars scattered in many lands, whose lives are now a sacrificial testimony to the principle of

intellectual freedom, we in this protected hemisphere pay tribute of admiration and homage

"It is no longer possible to make payments on appropriations for work in the occupied areas of Europe Norway, Belgium, Holland, Denmark, France, Roumania—the projects which were being supported in these countries in medical research and in the natural and social sciences cannot now be assisted

January, 1941, finds a large number of universities and institutes closed and many others working under conditions scarcely tolerable

Allowed at first to continue with their work, their teaching and student activities were closely supervised

The supervision involved an attempt to enforce a "cultural program" similar to that imposed by the Nazis on German institutions Where this attempt was resisted, as it frequently was, the measures of repression adopted by the occupying authorities included the closing of the institutions, sending faculties to concentration camps, and even breaking up student demonstrations with machine guns and tanks

"The condition of university life and standards on the Continent is now little short of appalling Due to flight, imprisonment, or disappearance the number of professors in institutions has been reduced by at least 50 per cent Professors residing in German-occupied ter-

ritory who were known to be anti-Nazi have been taken to concentration camps or have disappeared

Similarly in Lithuania, Latvia, and Estonia the process of converting the universities into Soviet institutions has proceeded rapidly More than half the professors have been removed from their positions, and many of them have been imprisoned or have disappeared

"Over the Continental universities hangs the pall of uncertainty and fear The contact with contemporary life has been abruptly broken when the German Minister of Justice tells the Association of University Professors that the old ideal of objectivity was nonsense and that 'today the German university professor must ask himself one question Does my scientific work serve the welfare of National Socialism?' He is voicing a doctrine which if broadly applied spells the end of Western scientific thought

"It is only in an atmosphere of freedom that the lamp of science and learning can be kept alight In all the history of the race knowledge has never flowered in a subject people It is only free men who dare to think "

Thus, does Dr Raymond B Fosdick of the Rockefeller Institute picture the fate of European universities under the impact of National Socialism, under a panzer pandect, in the shadow of the mailed fist Today, Europe, tomorrow ?

## Medical Libraries of New York State

"Beware," said some ancient sage "of the man who reads only one book." We are not aware that he made any pronouncement concerning the man who reads no books at all, but of the two we would prefer the ignoramus to the bigot

Happily in the State of New York the number and distribution of medical libraries is well and clearly shown in the article published in this issue of the JOURNAL on page 1098 by Florence A. Cooksley, M. A., of Rochester We do not know of any previous study of medical

libraries of the state which shows their distribution and the character of the services rendered on so comprehensive a scale as this one which it is our privilege to bring to the attention of physicians Mrs Cooksley has rendered a most commendable service to those who, we hope, do not confine their reading solely to the semimonthly pages of this JOURNAL

No one in the state can complain that adequate medical library service is denied him We hope that every member of the Medical Society of the State of New York will read Mrs Cooksley's article care-

fully Table 1 affords a rapid and accurate means of finding at once what libraries and services are at hand in any locality in the state as well as other data relative to use, support, and lending

privileges. The editors of the JOURNAL are pleased to be able to present this exhaustive study for the use and convenience of the students of medicine in the state.

## "The Lady or the Tiger?"

We are advised by Mr. Walter D. Shackleton, chief of the Bureau of Public Information of the New York City office of the Selective Service, that stark tragedy after the pattern laid down by the late Frank Stockton walks with grim and fearful tread in the wake of the draft. He cites the following letter:

"Local Board Chief: I am secretly married because my mother-in-law hates me. I have been classified as 1-A, and have a very low order number. If I

keep my marriage secret I will have to go to camp. If I announce my marriage I will have the old lady after me. What do you advise?"

What, indeed? We feel that the medical profession, faced with this human dilemma, could well afford to brush up on its Greek tragedies and don the mask of a *deus ex machine* age. Knowing the facts of the matter, let the local draft board physicians do their good deed and pass him—quickly, secret marriage and all—into the mills of the gods.

## History of Medicine

This year for the first time a new and important session was added to the scientific program of the Annual Meeting, a session on the history of medicine in the state.

The State of New York has played a notable part since colonial days in the history and development of the science and practice of medicine, both civil and military. It is fitting that this story should be chronicled and discussed at our meetings and that those physicians who are interested students should be afforded the opportunity to present their work.

In this connection, may we suggest and stress the great opportunity that exists in nearly every community to utilize the meetings of the local historical societies to present to the public the story of

medicine both ancient and modern. County medical societies could well afford to follow the example of the State Society by organizing sections on the history of medicine. Material collected by these sections could be made readily available to speakers for use in the various community meetings of the historical societies. We hope that this will be done, not only because of the opportunity it would afford physicians to better themselves as public speakers but also because it would open one more channel of direct communication between medicine and the public. Such direct channels, we opine, will be an increasing necessity as the broad and sinister wedge of government is driven more deeply between the physician and his patients.

# Round Table—Preparing the Disabled Worker for Re-employment

## THE ROLE OF PHYSICAL THERAPY IN THE EARLY TREATMENT OF THE INJURED WORKMAN

MADGE C. L. MCGUINNESS, M. D., New York City

REHABILITATION would be unnecessary in the majority of cases if we were all endowed with ordinary common sense and had enough to eat. One might say common sense alone is necessary, for, granting this, one would pick a liberty-loving, intelligent, properly fed ancestry and all else would be added thereto. Lack of employment means poverty, which causes hunger and fatigue, begets disease, and creates fear, worry, and instability—mental, moral, and physical. Lack of marked intelligence coupled with lack of proper education, clumsiness, carelessness, and fatigue, physical and mental, cause more than 90 per cent of the injuries requiring rehabilitation.

*Prevention and carefulness* have been the outgrowth of the task of rehabilitation, so there is some hope for the future—especially in industry, where safety devices and precautions of all kinds are now commonplace rather than exceptions as formerly. Employees, as well as employers, are learning the hard lesson. The greater number of injuries are still in the home, and these accidents are almost invariably due to the victim's own clumsiness, carelessness, or both, as oft-repeated statistics show.

Therefore, we will avoid rehabilitation in the future by having healthy mothers and fathers having healthy and intelligent children with fewer queer brain waves who, instead of being spoiled as at present, will be properly trained to take care of themselves.

Physical and mental fitness will be the great desideratum, and the nervous, the weak, the ill, and the unfit will be a gradually diminishing minority being rapidly rehabilitated or liquidated by nature in her own good time and way.

Stress will be laid upon industrial rehabilitation in this session, since that is what concerns a number of us today. Millions are spent yearly on these cases, especially in the

so-called "compromise" cases that are non-scheduled cases dragging out for months and years and eventually being settled to no one's satisfaction—the patient thinks he didn't get enough, and the carriers are sure he got too much, they also resent the hospital and medical bills, as well as the compensation. The medical bills are certainly not excessive if good work is done. Physicians are put to all sorts of annoyances from excessive tabulations to wasting time before arbitration boards where the arbitration may be quite unsatisfactory. Recovery is frequently retarded because adequate active treatment is not begun soon enough, and the patient is too frequently left to his own devices to think unduly of himself and his ailments to no good end.

There is also another angle—if the carriers limit remuneration for the surgeon, how can he call in the specialist in physical therapy? For a bad Colles's fracture \$65 is certainly insufficient for the skilled and busy surgeon, for he cannot possibly give the time and attention to working with the patient that the physical therapist has to give. There really should be something done to raise these subminimal fees. At the arbitration of 1 case of streptococcal infection of the hand of a boy 18 years old, where there was continuous daily supervision and treatment hourly for more than a month, the extremely modest bill of \$75 was cut to \$23! On another occasion two other physicians did not even know we had specialists doing this work. They asked, "Why didn't the surgeon do this work himself? Why didn't the intern do it? Why did you have to have a specialist do it?" At that time there were scores of extremely ill patients in the wards, and surgeons and interns were run ragged with the amount of regular surgical work.

The question is: Why were these two non-surgical physicians sitting in judgment on a case that was only saved from amputation and possibly death by the combined attention of several surgeons, interns, physical therapy physicians, nurses, and technicians? But

since they *do* sit on arbitration boards, they should be educated to what skillful surgery means and entails "The laborer is worthy of his hire," but that hire may be totally unworthy of the laborer. The insurance company says it is the county medical society that fixes the fees, and the county medical society says it is all the insurance company will give. Between these two points of view, the surgeons and physicians suffer, but they will, as usual, go on giving of their best.

## Rehabilitation

Physical therapy and rehabilitation should be almost synonymous—at least one should always be thought of when the other is mentioned—since physical therapy can be such a useful adjunct to medicine and surgery in so many instances. The industrial surgeon, as a rule, quickly sees the advantage to be gained by employing this adjuvant as early as is compatible and is thus spared many failures, mental and moral as well as physical, when there issues forth the complaint of the majority of traumatic cases, "they just let me lie there and didn't do a thing for me."

In many conditions an injured person is a person with a grievance. He is sure his "case is not well understood, he is really sicker than the doctors realize, what can a young doctor know of his case, and how can the older doctor, who sees him only a few minutes during rounds, realize his condition?" If he is employed and anxious to get back to his job, time hangs heavily upon his hands, and so he has plenty of time to worry about his family, the future, the result of his injury, his ability to work, and especially whether or not his job will be awaiting his return. If it is a compensation case, while some of the worry is relieved, the amount paid is usually insufficient to support himself or family, and debts are gradually piling up to be paid months or even years later. Then, if the injury is severe, he may be unable to return to his old job and what is to become of him and his family? To those of us dealing with traumatic cases this is the great concern—how can we return these cases to industry—any industry—quickly and economically?

To a person of normal constitution, who is, therefore, usually normal mentally as well, reaction to treatment is quick and decided. He responds, is anxious to get well, puts his mind to work on the future and, if he cannot resume the work to which he is accustomed, will endeavor to find another occupation that promises to remunerate him. In this class

usually are the mental workers or the highly skilled mechanical workers who have resources within themselves. However, there are numbers of workers who may be skilled in one particular line but whose education is far from extensive and who, if they lose their jobs, are a total loss—mentally, morally, and physically—unless someone is able to intervene and is willing to rescue them from the Slough of Despond and train them to work before the iron has completely entered their souls.

When the surgeon is making a grand job of putting the broken body together, he is using, *pari passu*, physical therapy to keep the organism fit, so that when the time comes to get the patient on his feet his muscles will have their tonus, his legs will carry him, his feet will be his own, and the bed won't feel so welcome after fifteen minutes' absence from it. This is particularly true in fractures and dislocations where the gentlest heat, skilled gentle massage, active motion of parts distal to the site of injury, and postural, respiratory and general active exercises are begun directly following reduction and immobilization. Teaching the patient proper posture, to breathe properly, to exercise his uninjured members, to move about within his circumscribed area, to move his fingers, to make a fist, to shrug his shoulders, and to contract the muscles within the cast or extension apparatus in injuries of the upper extremity will go far to prevent the adhesions, immobility, stiffness, pain, and marked disability that frequently ensue when the appliances are off, when the bones have knit, when the dislocation stays reduced, and when the wounds have healed.

This is especially true of hand and wrist injuries where the patient easily falls into the habit of doing nothing for himself intensively and continuously. While gentle heat and massage are excellent aids, it is the active exercise of body, mind, and injured member which is going to set this patient's feet on the road to a job. *Passive motion* has no place, usually, in fractures. When done, it should be the special concern of the surgeon or, at his behest, the physician especially trained in this particular work. The latter must be absolutely sure of his physical therapy assistants to delegate so delicate a task to them. It is not the ordinary technician's province. In wounds of the hand, unless motion is begun early, the result is usually a foregone conclusion. Sometimes through fear of pain, further injury, and the small amount of com-

pensation, the patient will *not* move his fingers, attempt to close his fist, or try to flex or extend the wrist. When, after months of late physical therapy, he finally *does* try, it is too late.

These are the cases that bring discredit upon physical therapy. It has been given too late, the patient's mind as well as his hand is set, and he knows he has been hurt more than anyone believed. When the truth is borne in upon him and he realizes he is doomed to pain and disability and that he is no longer a skilled worker commanding fair wages, he is then at war with his world and, sooner or later, he becomes a public liability.

In injuries of the lower extremity where longer time is required for healing and bed rest is absolutely essential, active exercise is needed more than ever in conjunction with the usual measures of gentle heat and massage. If this patient is to stand up in the world and tread again the wage earners' path, he must be in good general and local condition, his convalescence must be shortened, the habit of dependence must not be permitted to fasten upon him, and he must learn to do for himself.

It is a pity that every hospital is not endowed with a department of occupational and work therapy so as to keep alive and alert the mental and physical faculties of its bed patients. Were this possible, there would be much less unemployability at such an enormous cost as we now have and there would be fewer psychopaths and disgruntled humans.

Hydrotherapy, especially in the form of hydromassage given, generally, in all these cases as soon as possible, goes far to giving a sense of self-respect and well-being such as no other form of physical therapy can create. The patient looks forward to his underwater massage and exercise by means of the whirlpool, and he develops a desire to cooperate. If heliotherapy is unavailable because of inclement weather, properly given carbon-arc, radiant light and heat and ultraviolet will help to revive drooping spirits and prevent muscle destruction. But occupation is needed as well, and this is frequently unobtainable. In certain cases the entire ward, office, and clinic have been set by the ears because of one restless, disgruntled, complaining patient who will not hesitate to make himself a nuisance because of lack of some occupation and no resources within himself.

There comes a time, however, when surgery has done its utmost, when physical therapy can help no further, and when getting the injured worker back to work is the all-im-

portant consideration. This, of course, is ever present in the mind of the physician, hence his training of the patient to do those things that ordinarily one does for himself in the daily routine of life. But, many times, the patient, especially if a compensation case, is out of the habit of work—he knows too much about his case, his symptoms, his supposed disability—he fears to face the future. His injury has given rise to a neurosis. In the ordinary course of events he will remain idle until his case is settled after months or years of discussion and wrangling between carriers and physicians, and then he will spend his substance within a few months or perhaps it may last a year or more. When it is gone, he is exactly where he was when discharged from the hospital as far as work is concerned—he is 100 per cent unemployable.

To get his "pain and disability" out of his brain is the great problem, and herein lies the most important part of rehabilitation—that of vocational guidance. This neurotic must learn again to use his muscles, actively, forcefully, with purpose, tools must be put into his hands and he must be shown how to use them. His teachers must be trained, skillful, patient, directing, guiding, stimulating, and encouraging. If there is such a group in your city, find it and direct your cases to it. If there is none, set about creating one.

The American Rehabilitation Committee was founded in 1920 after the First World War. New York State has a district director of the Rehabilitation Division, New York State Education Department, Frederic G. Elton, who conceived the idea of a Rehabilitation Clinic—a nonprofit organization. It is a work clinic where the disabled worker is checked up as to his capacity and ability and mental and physical fitness and where he is salvaged from the "dump," often in spite of himself, and remade into a useful citizen through carefully planned and constructive activities leading eventually to employability. The workshop has devices such as are required in the various trades, and these call for active physical and mental exercises on the part of the worker, whose interest is awakened and stimulated by seeing an object take form under his very eyes—the work of his own brain and hand. Frequently, undiscovered abilities come to light and point the way for better opportunities and remuneration.

It is the carrier's responsibility to see that the workman has no difficulty financially when the surgeon asks for work therapy.

There will be greater dividends in many ways from this policy than from the present one of get as much, give as little, as possible. Then patient, surgeon, physician, and carrier will work harmoniously to the best advantage of the injured person, and there will be fewer grievances all round.

### Summary

See that the workman fits his job to prevent trouble.

Keep up standards of fitness.

Treat the injured patient early for best effect. Late "intensive physical therapy" may be too late. Stress self-help. Physical

therapy given early means early to work. Posture, active exercises, various modalities of physical therapy are essential to shorten convalescence. Occupational therapy helps. Work therapy is needed in certain cases, and it is cheaper for carriers to take this into account than to have these people eventually go on relief. The surgeon who institutes physical therapy early is more likely to have his patient return to work in good condition. The physical therapy physician can materially shorten the convalescence and stress an early return to work. In this way there will be fewer workers on relief, fewer misfits, and fewer grouches with grievances.

## THE EARLY USE OF PHYSICAL THERAPY IN THE TREATMENT OF INJURY

Its Role in Minimizing the Need for Late Rehabilitation Measures

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**T**HE true but true saw that an ounce of prevention is worth a pound of cure is particularly applicable to the problem of minimizing residual disability following injury. This paper, in discussing the role of physical therapy methods in dealing with the problem, is essentially a justification of, and a plea for, the intelligent early use of these methods.

It is rather perplexing to hear frequent disparagement of the early use of physical therapy in the treatment of injury by those who nevertheless depend upon it implicitly in the late rehabilitation of the patient, often going so far as to depend on it exclusively. It is, in fact, impossible to explain any such point of view on a logical or physiologic basis. The very effects that are cited as proof of the value of physical therapy in late rehabilitation may, if exhibited during the first two to three weeks after injury, make those rehabilitation measures largely unnecessary. And this logically has to be so, unless our conception of the pathologic process that follows injury is entirely wrong or unless the physiologic effects credited to physical therapy measures cannot be elicited until the inflammation and repair process is completed. Neither one of these alternatives is tenable. The position that

physical therapy is of little or no value in the treatment of injury is a distinctly tenable one if based on a supported denial of the physiologic effects commonly attributed to the methods. But to maintain that it is effective if used late but useless if used early comes close to being ridiculous.

Before attempting to discuss the use of physical therapy in trauma, let us understand the primary pathologic process that leads to residual disability. The violence of trauma induces a variable amount of cellular death and devitalization, with a variable degree of damage to capillaries and lymphatic channels. The breakdown of dead and devitalized tissue produces chemical irritants inducing a so-called inflammatory reaction. If actual hemorrhage into the tissues occurs, the inflammatory reaction is increased in severity by the chemical irritation of broken-down blood constituents. Unless massive tissue death has shut off all circulation, the process of inflammation is initiated by increased vascularity of the part, dilatation of the smaller vessels and by inflammatory exudation into the part. This leads to heat, redness, swelling, and pain from tension—characteristic symptoms. With increasing tension plus the primary damage done to capillaries and lymphatics, blocking of the minute circulation occurs, with fluid transudate adding to the story of tissue tension. Indeed, this increasing tension may go on to complete local circula-

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tory block and tissue death from this cause, as is often the case in the more intensely violent types of inflammation, such as burns, for example. Rapid clotting of the extravasated blood and inflammatory exudate occurs. Large portions of the blood and exudate, together with the irritating products of tissue death, should normally be carried off by the lymphatic and capillary circulations.

If by reason of tension and damage this minute circulation is blocked, then the fibrin network is larger and denser than it should be. And conversely, the more efficient that minute circulation, the less dense and inclusive will the fibrin network be. Moreover, the fibrin itself can be digested and carried off *so long as it is fibrin*. But within a few hours fibroblasts begin to grow out along the fibrin strands, initiating the repair process. At seventy-two hours a considerable fibroblastic growth can be demonstrated following any trauma with tissue death and extravasation into the tissues. Within a relatively few days the removable fibrin is represented by the irremovable collagen of new connective tissue. It is the new-formed and often excessive connective tissue that leads to thickening and loss of elasticity in mesotenon and paratenon, to fibrosis and loss of power and elasticity in muscles, fasciae, and ligaments, to fibrosis and pressure in and about nerves, and to prolonged obstruction of the minute circulations by, in effect, a broad, connective tissue tourniquet.

It is obvious that any treatment that will increase the rate of flow in the minute capillary and lymphatic circulation of the part will, if applied during the stage of inflammation and repair, eliminate hemorrhage, exudate, fibrin, and edema with a rapidity and in an amount roughly proportionate to the degree of efficiency of the minute circulations attained. It is not only obvious but it is clinically true. If applied early, such measures will eliminate in varying degree the pathologic conditions that lead to the disabilities requiring rehabilitation.

There is not enough definite information available as to the total physiologic effects of the various so-called modalities of physical therapy. There is still too much vague and indefinite quasi information cited in support of hoped-for physiologic effects. There are still those who are sure that the production of increased redness and heat in a part is evidence of increased circulatory efficiency therein, whereas intense engorgement with decrease in circulatory efficiency as measured

by rate of flow through the part is frequently the explanation. I have no intention of discussing the supposed actions of the various modalities of physical therapy. Speaking as a surgeon, I can safely state that any measure that will soften or eliminate induration, diminish swelling, and lessen the redness and heat of the part during the early inflammatory reaction after trauma is insurance against the need for late rehabilitation measures. From my own experience and that of others over a good many years, I have been convinced that elevation, gentle stroking, *sedative* massage, *low-degree heat* for *prolonged* periods, guided and resisted *active* exercise *when it can be accomplished without pain*, and muscle activity by electrical stimulation providing rhythmic, slow, alternating muscle contractions and relaxations *without either spasm or pain* will produce the effects cited above. Likewise, heavy massage causing discomfort, intense heat for short periods, active exercise resulting in pain or spasm, and electrical stimulation giving muscle spasm or pain result in aggravation of the conditions for the relief of which they are given. Regarding diathermy, for the moment merely as a method of applying heat, high milliamperages for short periods of time belong in the latter group and low milliamperages for prolonged periods of time belong in the beneficial group. Therapeutic lamps giving intense heat for short periods of time do not help, while the low heat of two or three ordinary light bulbs inside a blanket tent over a period of hours is a definite benefit.

It is particularly in fracture cases that this early use of physical therapy is deprecated, yet it is in these cases that it is particularly valuable. True enough, its early use in these cases necessitates the employment of methods for treating the fracture which will allow ready access to the part for the use of physical therapy, and these methods are sometimes more difficult to carry out than other simpler methods that have ready access to the affected regions. If for any reason it is not possible to treat the fracture in a manner that will allow the use of early physical therapy, it obviously cannot be used. But this is surely no argument against the value of its early use. Nor is the final result alone the criterion whereby its value is to be determined. In the treatment of all injury, more particularly in industrial cases, the time taken to get an end result is of an importance almost as great as the result obtained. This fact cannot be too heavily stressed. And it is in the shortening of convalescence time by material reduc-

tion of the late rehabilitation period that the early use of physical therapy exhibits its greatest usefulness

Let us put the matter on a basis that brooks no argument. Any procedure that will improve the efficiency of the minute capillary and lymphatic circulation during the stage of posttraumatic inflammation and early repair will materially decrease the expectancy of residual disability necessitating later treatment. If there are procedures that have this effect, their use in the first ten days to three weeks following trauma will give decreased convalescence time and improved end results.

It is to be noted that the demand is for a single effect from the methods used—that of increased efficiency of the local minute circulation. Putting into the discard all other claims as to the effects of physical therapy modalities, are there physical therapy methods that will result in an increased local efficiency of lymphatic and capillary circulation? The answer is, I believe, in the affirmative, even though there may be considerable uncertainty as to the actual mechanism whereby the effect is produced. But it is a qualified affirmative, in that all the methods I have mentioned must be considered quantitatively as well as qualitatively. One cannot talk merely of elevation, heat, massage, muscle stimulation, and exercise as the forms of physical therapy to be used early in the treatment of injury. *Extreme elevation, intense heat for short periods of time, high milliamperage diathermy, massage causing pain or discomfort, muscle stimulation causing spasm or pain, and exercise causing distress to the patient* will only intensify local stasis in the minute circulatory apparatus. They should never be used.

The treatment of injury is an economic problem in a large percentage of cases. That is why convalescent time is almost as important as the final result. Two objections based on economic grounds are commonly raised to the early use of physical therapy in injury. One is the cost of the treatment. The other is the necessity for longer hospitalization of many fracture cases if they are to have effective physical therapy for ten days to three weeks. A third objection commonly heard is that it is unsafe to trust many fracture cases to the early ministrations of physical therapy technicians. A fourth is the difficulty of carrying out, in fracture cases particu-

larly, methods of treatment (such as suspension, the various methods of skin and skeletal traction-suspension, and operative fixation) which will allow early physical therapy.

Can these objections be answered? In regard to the first—the cost of treatment if adequately applied, the cost of early physical therapy should be more than offset by the saving of time in convalescence, even if the end result is no better than that obtained without its benefit.

The second objection is met by the same answer in regard to the necessary hospitalization time. But in many hospitals, particularly large municipal institutions, the turnover is such that by virtue of necessity those methods must be used which entail a minimum of hospital stay. This is an insurmountable objection as long as that condition is true, but in these same hospitals the cases that must necessarily be treated by methods requiring long hospital stay, and allowing early physical therapy, do not receive its benefits.

The third objection is certainly valid at the present time in many cases. The percentage of cases in which it is valid is, in part at least, up to the physical therapists. It is a question of adequate knowledge and training without the handicap of undue expense in treatment.

The fourth objection is valid when, because of lack of experience, skill, equipment, personnel, or organization, it is impossible to carry out methods of fracture treatment which will allow of the early use of physical therapy. But in many cases this requires only some personal initiative and effort for improvement. I strongly urge that the economic factors involved are important enough to warrant the effort. A supine inertia characterized by the expression "We can't do that" is often the only obstacle to overcome.

## Summary and Conclusions

There has been presented evidence to support the view that early and intelligent use of physical therapy adequately meets the problem involved in the pathologic processes that follow trauma, and that its wider use, wherever it can be made possible, would be, on both clinical and economic grounds, a definite advance in the treatment of injury.

## REHABILITATION FROM THE STANDPOINT OF THE CARRIER

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THE stimulus that rehabilitation and physical therapy received during and right after the World War was sufficient to attract the interest of the industrial medical world. It is true that the injuries of war are different from those of industry, but the fundamental principles of treatment are the same. There is no question but that rehabilitation and physical therapy intelligently applied are paying propositions both from a humanitarian standpoint as well as from that of dollars and cents.

In selecting our cases we must first decide if the case is one amenable to this type of treatment. We cannot always say whether treatment will be successful, but we can make our decision from past experience with similar cases. Cases that are outside the field of physical therapy—for example, injuries to the semilunar cartilages, sequestrums of bone, and constricting burn scars of the axilla, to name a few—should not be accepted with the hope of accomplishing a cure. All other factors being equal, the quicker method is the more economical, and physical therapy should not compete with surgery but should supplement it.

Just as an x-ray film is no better than the man who reads it, so is physical therapy no better than the person who administers it. It goes without saying that treatment should be supervised by a medical man and administered by a person, well trained in this field, who understands both the physiologic and pathologic effects. Physical therapy is not a soft snap or a gold mine as certain manufacturers of equipment in times past have tried to convince the medical profession. The use of a therapeutic lamp of some sort two or three times a week is better than nothing but is hardly sufficient in itself.

At our clinic we do not treat acute fracture cases, but we get better end results when a patient is referred to us more promptly after the immobilization period is over. Improperly applied or prolonged immobilization makes physical therapy doubly necessary. The healing of the fracture is of prime importance, and the institution of physical therapy should not jeopardize the proper healing of the bone. There are times, such as in acute back cases,

where a patient has to ride several miles in a street car or automobile to get a treatment. We feel that it is better for the patient to stay at home for a few days so that he can rest and apply some form of heat there. Later on, after the acute stage has subsided, he can come in for treatment.

In selecting cases the medical reports of the attending physicians, as well as reports from the company doctors in the field, are reviewed, and likely cases are examined by a representative of the company to pass on the advisability of accepting them for clinic treatment. If the case appears to be one that could be substantially benefited by treatment, steps are then taken to see whether or not he can come to the clinic. However, this is not done without the consent of the attending physician. The company defrays the cost of transportation and allows the patient an adequate amount for maintenance as long as he is being treated. Any medical or surgical emergency arising while he is a patient at the clinic is referred to a local physician as indicated.

As a rule we treat every case six days a week, and many of the patients have stated that they have noticed much more progress than when treated twice or three times a week. Treatment is continued as long as the patient shows satisfactory improvement. Prolonged and futile treatment does not pay. Patients are examined every two weeks, and degrees of motion are recorded so that we can keep an accurate check of the progress.

The type of treatment depends on the injury. Some form of heat is first employed, such as whirlpool bath, short wave diathermy, baking lamp, etc., followed by massage and passive motion as indicated. Active motion is encouraged, and patients get this in the curative workshop. Often they are given certain exercises to do at home. Besides providing for the exercising of the injured member, the function of the curative workshop is to offer a diversion to bolster the patient's confidence in himself and to divert his attention from his infirmity. We are able to get a better idea of the patient's true condition by observing him at work. The objects that he makes become his personal property to take with him when he leaves. Patients also perform their formal exercises in the workshop, which is equipped with various

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the worth of our treatment. If the company only broke even we would feel that our efforts would still have not been in vain.

### Conclusions

Rehabilitation intelligently applied is a paying proposition. The following questions have been discussed in a general way: who,

whom, when, how, how often, how long, and with what results.

The curative workshop is an invaluable aid in restoring active motion and strengthening the muscles. It is also an important factor in maintaining the patient's morale and is at the same time, an instructive diversion.

## REHABILITATION AND WORKMEN'S COMPENSATION

V. A. ZIMMER, Washington, D. C.

THE basic philosophy of workmen's compensation has never been more clearly and more concisely stated than in the formula upon which the first act was established nearly 60 years ago, namely: "Industry should provide for giving compensation for pecuniary loss caused by accidents in connection with work, and add this expense to the cost of production."

In theory, this principle has been accepted in almost every sovereignty in the world. In practice, it is fully applied in none. Even under the most liberal of acts the injured workman suffers substantial pecuniary loss, and under a majority of existing acts he loses far more than industry in terms of money alone. Unfortunately, he cannot charge his share to production costs and pass it on to the consumers. He and his dependents must absorb it fully or at least up to the point where the public must step in and provide further relief.

Perhaps in no other form of social legislation has there been so much compromise with principle or so much variation in benefits or in form of application and operation of these benefits than in this business of compensating the worker for injury disability. We find, for instance, that a worker's arm in Wisconsin is worth \$10,500, in New York, \$7,800, in Michigan, \$3,600, and in Rhode Island, only \$2,000. In some states, today, no payment is allowed for permanent damage to a member unless it is amputated. In other words, a completely ankylosed wrist or foot or finger is compensated only on a temporary disability clause.

Now, about the all-important and vital matter of medical benefits—here we find an

equally variable concept of what constitutes equitable compensation for pecuniary loss.

In only eight of the forty-seven states having workmen's compensation laws are there no limits whatever on the liability of an employer to provide medical care for injured employees—either as to the amount of the money to be spent or as to the period of time over which treatment may be given. In one other state in which there is no limit as to the amount of the employer's liability, statutory limitation of the period of medical treatment to the period of compensation has been interpreted by the industrial commission as constituting no limit. In thirteen other states in which the laws impose definite limits on either the amount of the employer's liability or the period of medical treatment, or both, the board or commission is given the power to extend the limits indefinitely.

In the remaining twenty-five states, however, the laws impose an absolute ultimate limit upon either the amount, as in ten states, the period as in seven states, or both as in eight states. The limitations imposed by the laws of these twenty-five states differ—the amount limits vary, ranging anywhere from \$50 to \$800 in amount for medical treatment and anywhere from a record low of fourteen days up to one hundred months in period of time. It may be added, too, that in five states medical benefits in cases of silicosis are accorded special treatment usually in the nature of more definite limits as to time and amount as compared with accidental injury cases. To anyone at all familiar with the nature and type of injuries that are paraded before a compensation administrator, it is obvious that thousands of workers in this country either do not receive adequate medical treatment for their injuries or the public is assuming the burden of restoring them to physical fitness.

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Director, Division of Labor Standards United States Department of Labor

pieces of gymnastic apparatus. We do not attempt here to teach the patient a new occupation, but we try to restore his usefulness so that he can resume his regular occupation if possible.

In treating the patient, the injured part should be manipulated gently so as to get better relaxation and to gain the patient's confidence. Sudden and jerky movements are avoided. For instance, in giving passive motion, one minute is allowed to carry out that motion to the point of tolerance. The part is then held at that point for a minute or two, and then one minute is allowed to reach the starting point of motion.

The clinic at Syracuse was instituted in 1922 under the capable leadership of the late Dr. C. P. Hutchins, who had had a wide experience in rehabilitating thousands of soldiers wounded in the World War. To date the clinic has treated around 2,700 compensation cases—patients who come from as far south as Washington and as far west as Minneapolis and Chicago, many come from places remote from medical centers.

On admission, the patient's history is taken and he is examined. Routine laboratory tests are made. The clinic has a consulting staff to which patients are freely referred for purposes of diagnosis and advice as to methods of treatment. A search is made for any possible focus of infection, especially the teeth and prostate gland. If a focus of infection is found, appropriate treatment is instituted. We find that most of our patients have infected prostates, these are treated twice a week by a urologist. Autogenous vaccine therapy is resorted to in some cases.

The clinic does not treat any acute cases. The majority of our cases have had some injury to the wrist or hand, and they usually offer a good prognosis for improvement. However, in hands where there has been extensive inflammatory involvement with the formation of adhesions of the tendons, the outlook is not promising. Extension defects of the fingers usually offer a poor prognosis. Bursa cases are somewhat erratic, and some of them clear up quickly under treatment, while others lapse into a chronic stage. In periarthritis of the shoulder and subdeltoid bursitis, we have found that restoring abduction past 90 degrees is usually a slow proposition. Elbow cases respond well to treatment, extension defects being harder to correct than flexion defects. In fractures around the elbow, strong passives tend to produce excessive callus. Epicondylitis is usually slow to

respond. Old flexion defects of the knees are amenable to treatment but are slow to respond. Extension defects offer more difficulty, especially the last 15 degrees.

Foot and ankle cases usually offer a good prognosis for improvement when there has been good anatomic relationship, but ununited fractures and fractures of the os calcis with involvement of the subastragalar joint are often impossible of weight-bearing without surgery. Metal arch supports are usually supplied when patient has been off his feet for a long time and where patient has been relieved by inversion strapping.

Negative galvanism is used for treating small scars but is not employed on large ones where plastic surgery would be more appropriate. In cases involving a nerve injury we strive to improve the circulation of the part but guard against excessive electrical stimulation which sometimes tends to further damage the paralyzed muscles. In cases of complete paralysis the careful use of the sinusoidal current may maintain the muscle mass that would not otherwise be present. It has no effect on the speed of regeneration of the nerve. Once voluntary control has been established, muscle training and active use are more valuable than artificial stimulation.

Back cases are our biggest problem. The diagnosis may be obscure, symptoms may be entirely subjective, and treatment is often prolonged and disappointing. After a patient is discharged and judged capable of doing light work, he is likely to find no light work available, and he may have a recurrence of his old trouble if he does any bending or lifting. This means he will be back again for another course of treatment. In back cases, as well as others, we have x-ray studies made by a competent radiologist, and the patient is examined by an orthopedist. Many cases are fitted with a support. A patient with a bad back is especially prone to get discouraged and needs to be encouraged. We must not forget that we are treating an individual not just a bad back or a bad knee. Psychotherapy plays an important part, and the activities in the curative workshop are helpful in distracting a patient's attention from himself.

After it is judged that a patient has reached the limit of improvement through treatment, he is discharged. The cases are followed as much as possible to find out how they are settled and how much permanent loss is awarded by the commission in their respective localities. In this way we can check up on

we all know, there sprang up numerous industrial medical clinics in this state and particularly in New York City. Some were good—some bad. Some were well equipped and well staffed; others were neither and, in addition, resorted to all kinds of chicanery in soliciting business from employers and carriers. In fact, their tactics brought about an inquiry by the governor of the state and, later, action on the part of the legislature.

In some of these institutions an investigation revealed that employers and carriers were paying for physical therapy actually performed by laymen under the most superficial supervision of licensed physicians. It is not surprising that the reaction to all this was harmful to the theory and practice of restorative therapy in workmen's compensation cases. Despite this experience, which in no way reflects upon the essential value of intensive and specialized physical therapy, and despite the practical deterrents in carrying out such treatments as already outlined, I believe there is more than ever a need for revitalizing and re-emphasizing programs for the fullest possible restoration of the injured worker, both physically and in terms of productive rehabilitation. I have in mind particularly the fast-developing industrial practice of making pre-employment and periodical physical examinations of workers and job applicants for what is sometimes termed "progress and profit." Whatever the motive and however well-intentioned, the fact is that this practice screens out workers with physical defects and makes it more and more difficult to restore maimed or crippled workers to productive jobs in industry. It is a somewhat ironical circumstance that I am today appearing here before a group of medical specialists devoted to the better care and treatment of injured and maimed workmen so that they can resume gainful employment. Only a few months ago I attended a meeting of industrial physicians who advocated stricter physical examinations if not for the purpose, at least with the inevitable effect, of keeping them out of employment.

Your major purpose, as I see it, is to put back into industry every maimed worker, equipped with the greatest possible restoration of his physical functions. You doubtless believe, as I do, that the workmen's compensation principle is not fully met merely by monetary payments and the minimum possible medical treatment but that, under this principle, no effort should be spared to make him a competent and productive worker.

On the part of your fellow practitioners who are striving for wider extension of pre-employment examination of workers, the motive is equally honest if not equally constructive. They believe that the general health cause will be promoted through the early detection and correction of latent defects and that the incidence of accidents and occupational diseases will be reduced by screening out, or the proper location, of workmen in a given industry. It may be argued, and probably will be, that there is no real conflict between these objectives. In theory there is none. But an examination of the standards of physical fitness set up by many industries as prerequisites of employment will reveal findings most discouraging alike to advocates of physical therapy and to rehabilitation officials whose duty is the job of placement of physically handicapped workers. It has never been an easy task to induce management to take on the rehabilitated worker, particularly one with a major physical defect. The rehabilitation service encounters more or less constant sales resistance. It requires no great keenness of vision to discern the fact that if this agitation for pre-employment examinations continues and the plans are only adopted by small industries generally the best efforts of a therapeutic specialist and the rehabilitation experts will go for naught. It is useless to refit the worker for a job that doesn't exist or for which he never can qualify simply because of a remaining anatomic defect.

A few years ago I sat in on a long conference between a rehabilitation worker of this state and the chief physician of a great railroad system. The immediate subject was the employment of a young lady who had been trained for office work by the Rehabilitation Service. The girl was lame as a result of infantile paralysis and used a crutch in walking. Her application for an opening in the railroad office had been rejected because of the impediment, and this conference was an appeal from the rejection. I recall that the doctor was quite adamant in his resistance. He maintained that even an office worker thus crippled was an extra hazard from the accident angle—that she might stumble and fall and thus become a compensation liability. It took several hours of persuasion and argument to get his final approval of the employment of this handicapped worker. Of course the doctor had no data to show that the lame worker falls more frequently than the normal worker. He reasoned that it must be so and

This situation under some of these limited medical benefit acts seems not unlike the spectacle of an ambulance rushing a stricken patient to the hospital gate and then unloading him on the sidewalk. Certainly, even modern medical science is not geared up to the mending of a broken back or the healing of a severed arm in fourteen days. And we can hardly visualize \$50 as defraying the cost of major operative treatment even at cut-rate surgery prices.

Of course we cannot believe that any seriously injured worker is actually thrown out of a hospital or a doctor's office at the end of thirty, sixty, or ninety days merely because the law limits the medical obligations of industry. What probably happens in many acute cases is that either the hospital or the private doctor carries on the treatment without remuneration if the worker is unable to pay for the services. Presumably, too, in many instances the public provides the medical services, through its relief system, from the point where workmen's compensation benefits leave off.

It has seemed to me advisable to throw up a rough but realistic picture of our workmen's compensation status in this country because it serves as a background for any discussion about preparing the disabled worker for re-employment.

In New York State, of course, the function of physically repairing the injured worker is not hampered by statute limitation of medical treatment under workmen's compensation. Here the workers are entitled to such medical aid and treatment as the nature of the injury demands, unless, unfortunately, he happens to be a silicosis victim.

Under workmen's compensation procedure the practical problem in this state, as I know it, is to determine at what point physical therapy should be suspended and at what point the case should be adjudicated and closed on the basis of existing disability. This is true both as to the schedule and the nonschedule type of disability. The question, of course, occurs most frequently in relation to injured members for which the act sets up a specific schedule of compensation allowance. Based on my own observation here in New York, we as administrators were prone to adjudicate these permanent injuries altogether too early. In practice, this is extremely difficult to avoid. In the first place, it is hard to resist the insistent demand of the worker, who, having lost at least one-third of his earnings during the temporary disability period, is naturally anxious

to get the money due him for a permanent loss. Our staff physicians are sympathetic with the claimant's predicament and perhaps after postponing final appraisal for several months may finally yield a point in the interest of economic urgency and fix the schedule, even though time or further treatment might bring about a better result or a more usable member.

The insurance carrier, too, has his own problem in respect to extended physical therapy in these permanent impairment cases. He has been advised from the start that some degree of permanency will result from an injury in a given case. Naturally he is interested in reducing this permanency as much as possible up to what we may call the point of diminishing returns. That is, he will insist upon continued therapy only when it is clearly evident that it will materially lessen the ultimate loss for which he is called upon to pay. Indeed, he can hardly be censured for weighing carefully the cost of restorative therapy against the cost of the schedule "as is." It should be kept in mind that the medical cost of workmen's compensation cases in New York State is about one-third of the total payments for direct benefits. It is quite natural, therefore, that the carrier demands rather definite assurance that an extended program of therapy is going to bring comparable returns in reducing direct benefit payments. I can well understand that medical science cannot, in all cases, give positive assurance of this result.

This brings me to a point that is most embarrassing, particularly when discussing it before a group of eminently ethical members of the medical profession, but it enters into this subject so prominently and pertinently that evasion of it would be simply dodging a factor known to every compensation administrator, every insurance carrier, and many medical practitioners in touch with the subject. Within recent years—and incidentally during my term as compensation director in this state—there came about a rather general feeling that physical therapy was overdone, that its benefits were grossly exaggerated, and that it was a commercialized field of the medical science. Whether justified or not, this specialized practice took on a somewhat tainted tinge in the eyes of administrators, insurance carriers, and even, I believe, some of the medical profession itself. Unfortunately, there were some undeniably tainted practices that prompted this reaction to an earlier enthusiasm for the science. As

We cannot overlook the emotional consequences of accidents. They are important and need consistent attention to secure in the least time the least loss of vocational capacity and work ability. Their neglect during the vital period immediately following accident provides the opportunity for their development and causes both unnecessary physical impairment and vocational interference. It is here that more complete after-care treatment is necessary. I will term it "physio-vocational therapy" because it combines physical therapy and vocational therapy.

First, then, to put this workman back with the least amount of loss of time and of vocational capacity and work ability, physical loss and vocational loss must be equally considered and handled concurrently. The doctor must be informed, but he cannot and should not be required to make this diagnosis of physical job performance impairment and needs. Two specialists are needed—the physical analyst and the job analyst. The latter makes a diagnosis of the injured worker's established vocational limitations and possibilities and determines the minimum of job performance physical activity to conserve a maximum of work ability. The physical specialist must consider this. Such job relation cannot be imprinted into medical service except by consultation and cooperation. The importance of the medical service is incontestable, but its present vocational value can often be questioned, particularly in the absence of physio-vocational attention as a part of that service. It is industrial surgery and industrial medicine, but it will only achieve maximum industrial accomplishment by cooperation and by consideration of the physical job performance requirements and the vocational limitations and possibilities of the injured workman—a program that will restore a maximum of his vocational possibilities.

With this emphasis on a major objective—to return the patient to work with the least amount of loss of time and loss of vocational capacity—it is necessary to determine the worker's major occupation. The work he was doing when injured may have no relation to his regular work. His major occupation must be analyzed with exactness, movements must be detailed, and strength and speed must be determined. With this, however, must be made an inventory of his broader normal or basic vocational possibilities.

The job history will indicate his work attitude and his dependence upon unskilled physical strength or a degree of skilled muscular

performance and will illustrate his work pattern as it has existed. A study of his personality characteristics, that have largely controlled his progress in employment, and his education, mental capacity, and aptitudes establishes his maximum vocational possibility or job level. This analysis gives job possibilities that, interpreted into physical job performance requirements, establish a relationship to the disability, it also gives the effect upon his return to his type of employment and the minimum of physical restoration for the rehabilitation of his physical work capacity. The disability consequences have not improved his general employability, on the contrary, they detract from his assets and accentuate his liabilities.

In weighing his vocational possibilities, changes resulting from the accident and their effect on his normal work pattern must be considered. As a consequence of accident the ability to engage in work and to enjoy the normal life of a normal person has been impaired. Life's routine is disturbed. The disability, enforced idleness, and compensation litigation may develop a lack of courage and confidence and promote fear, impatience, instability, and malingering.

Logically, emotional exhibitions of bitterness or indifference may be expected. Legal and medical influence, coupled with the continued discussion of his condition in his presence, can implant in him a deep-rooted belief that he is a most seriously disabled person. He starts scheming.

The extent of disablement may then be exaggerated. Emotional traits rapidly develop, nullifying job qualifications and destroying work habits. These consequences of accident are as important as the physical damage and need early and prompt attention. Prevention is better than cure.

The primary need of the adult injured is speedy restoration of earning capacity. The most satisfactory job readjustment is on the basis of existing qualifications, knowledge, skill, and experience. This again emphasizes the paramount importance of maximum physical restoration.

Because of the lack of provision for a job analyst for medical consultation and the absence of any physio-vocational therapy linked to the medical service, maximum functional restoration has often not been secured when the case is adjudicated, causing the award of an unnecessary percentage of physical loss and a consequent high degree of vocational impairment. This often amounts to

on that basis had set up his employment policy.

I think this is typical of many of the standards adopted by industry. They are based on theory instead of actual experience, but, unless they are checked through a more thoughtful appraisal of the economic and social effect of these restrictive employment standards, there will soon be no incentive for the science of physical therapy and for the technique of rehabilitation training. That would

mean merely relegating to the scrap pile those thousands of American workers who annually meet with permanent injuries in the course of employment. We would indeed thus solve our unemployment problem merely by adding millions to the ranks of the unemployable. It is my feeling that this organization can be made a real contribution in breaking down what seems to be a growing prejudice, a seeming fetish, for the employment only of the 100 per cent physically perfect worker.

## RESTORING WORK ABILITY

FREDERIC G. ELTON, New York City

**T**O GIVE point to my consideration of this topic and my discussion of it, I have defined the objective or purpose of everything that is done for a disabled workman, following accident, from the point of need, time, methods, and cooperation.

The purpose is to do everything possible to put an injured worker back to work with the least amount of loss of time and loss of vocational capacity and work ability and to do it with intelligent understanding of his employment needs.

I offer you then this thought—the job, a specific kind of job, as the axis about which rotates the life of each working man and woman. We are engaged in repairing a break in employment. Each service afforded the disabled worker will achieve its greatest value only as it contributes efficiently to this end and as each picks up without a break and supplements the other.

Surgery, therapy, compensation, and vocational adjustment will never function to the best advantage of the injured man until each intelligently cooperates in considering the man and his whole need as controlled by his employability generally and his qualifications and limitations specifically.

Large numbers of these industrial injured, after discharge from medical service and upon final disposition of the compensation claim with a percentage of physical loss or agreed upon settlement, are in no condition to return to employment. In fact, they are not acceptable to employers. To such numerical extent,

at least, something appears to be radically wrong.

If we would give this emphasis from the beginning of treatment to the preservation and restoration of work ability, it is necessary that we first know something about the specific physical job performance demands that control and limit each patient's work possibilities and, second, follow intelligent surgical work with immediate and equally intelligent therapeutic measures directed toward the job needs of the patient. This is an individual matter for these job performance demands differ. The physical job requirements must be known.

It is because of this difference in physical job performance requirements that physical impairment does not measure the extent of vocational or job impairment. A major physical loss, apart from its emotional consequences, may disclose no vocational loss while, to the contrary, a relatively minor physical loss in itself may be a major vocational loss (amputated leg, office manager versus index finger, right hand, watch repairman). Disabilities of equal physical impairment will likewise have differing vocational consequences. Physical loss and vocational loss are not necessarily alike and should not be considered so.

Vocationally, we can consider a great majority of the injured men and women as temporary totals immediately subsequent to the accident. It would appear to be someone's responsibility to prevent them from being vocationally permanent totals. It is going to make it a lot easier to do this, increase the possibilities, and decrease the time it takes to salvage these vocational wrecks if we can initiate this unity of thought and service and do it early.

Read by invitation at the Annual Meeting of the Medical Society of the State of New York, New York City, May 8, 1940.

District supervisor, Rehabilitation Bureau, New York State Education Department, New York City.

The range of work activity opportunity is from the skilled to the most unskilled type of employment

If, as has been demonstrated, employability by this means can be restored two to four years following injury and the closing of the case in the compensation record, is it not psychologically and economically sound to inject such service into the medical period of service to stimulate and hasten recovery and prevent the economic loss of unnecessary idleness?

### Job Training

Generally, an adult injured worker is happier when returned to work and to an environment with which he is familiar. To accomplish this, if possible, should be the combined objective of medical and vocational service

Maximum physical job improvement will not always render a workman able to return to his former work. A change of occupation, often unrelated, must then be considered. The carefully diagnosed employment qualifications may then be used to decide upon the advantages and possibilities of training for a new occupation—an occupation in which the residue disability will not interfere with the performance of the work and in which the workman may compete upon an equal basis with the other workmen.

The retraining of the adult for an entirely new work is often not feasible and not advantageous. To retrain in an entirely new occupation means that the adult workman may be required to start at the bottom of the ladder at a low initial wage and compete with the younger men entering that vocation. Jobshave similarities, and jobs with similarities should be grouped together. An injured workman should not be moved outside of that ring of jobs with similar demands unless absolutely necessary. Environmental conditions are as important as job performance. If retraining is to take place, it should take place within the circle of somewhat related jobs as to performance and environment

Vocational training has been successfully used when mental capacity and aptitude indicated its constructive possibility and advantage. Training has been provided in refrigeration, air conditioning, airplane sheet metal work, and innumerable other skilled trades. Thus, it has been a factor in putting the workman back on the job with the least loss of vocational capacity and work ability

### Examples

A man, aged 36, fell from a fire escape striking his head. After four years of compensation litigation and medical and neurologic examinations, a nonscheduled settlement in the amount of \$4,500 was proposed. Complaints of severe headaches, dizziness, tremors, and disturbances of vision and hearing were made. Four years of idleness had convinced this man that he could not again satisfy the demands of any employer, and he sought refuge in the idea of purchasing and operating a butcher shop of his own. The idea to him meant little effort and an easy living. He was absolutely unqualified for this business and unemployable otherwise. It was recommended that no further consideration be given to the settlement until it was determined what could be done to improve his employment status.

His vocational history disclosed that, although employed as a handyman just prior to the accident, he had previously been a skilled mechanic. He was placed in this supervised work activity service. Desiring to secure his settlement, he put great effort into his work, and as a result there was marked improvement in his physical and mental condition. His interest was aroused in mechanical work, and he voluntarily gave up the business idea and turned his attention to getting into condition to return to a regular job. Work treatment was quickly followed by regular training in machine-shop practice. This restored his former skill. The settlement was approved and paid with no danger of its foolish use when training was completed. Following quickly the completion of training, he was placed for one month without wage in employment in regular industry to re-establish his productive ability. He was then placed as a maintenance man on the repair and overhauling of business machines at \$25 a week—a wage \$8 more than he was earning on the accident job. Furthermore, he was reinstated in his former work as a machinist. His industrial and social values were restored, and he was fully compensated.

A man, aged 45, during the last six years prior to accident while employed as a taxi driver, had been injured six times. Five of these were head injuries. These repeated accidents were bad business for the insurance carriers. The complications were an antagonistic attitude toward everybody, family on relief, and great financial need. The last carrier had appealed from the referee's decision. The man had become abusive and had been arrested and committed for mental examination and observation. All this did not improve his emotional instability.

His vocational history turned up an early life as a jockey and horse trainer. This had been followed by association with the silent movies. He had been a co-author and actor in the first race-track film entitled, "The Home Stretch." Following this he had been a sales manager,

total vocational loss which, if left unattended, would be permanent.

When confronted with this condition often complicated with emotional interference, it became necessary to experiment in an attempt to restore vocational capacity and return the worker to employment.

The problem was one of improvement in physical function and mental attitude with the elimination of emotional controls. Direction and supervision were necessary. To secure this, supervised physio-vocational therapy or work treatment was initiated under private auspices\*. By effectively proving its value, it has ceased to be an experiment and has been the means of salvaging large numbers of these injured workmen after long periods of idleness following accident—workmen who were unemployable or only employable with marked down-grading in earning capacity.

A study was made of 246 exposed to this treatment over a given period of time. The average period of unemployment prior to admittance was twenty-two months. It ran as high as seven years in some instances. The average period of treatment was approximately three months. The results were as follows:

Re-employed	179	(72.7)
Employable waiting placement	29	
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Total employable as a result of the service	208	(84.5)
Discharged from medical service	2	
Discharged as unemployable	36	(14.6)

This was an older group who had to return to work on the basis of existing qualifications, the average age was 43 years.

The purpose of this physio-vocational therapy is to re-establish employability. By providing for attendance every day and for a full day, as medically permissible, the necessity for idleness is removed, and supervised muscular and mental effort is substituted, thus preventing or reducing the disastrous physical and mental consequences of injury. Actual employability can be tested and guess-work eliminated. By promoting maximum voluntary manipulation and use of the disabled part, it completes the work of the doctor and determines the necessary permanent physical limitations. It puts actual relative values on the percentages of physical and vocational incapacity and on the degree to which

both are controlled mentally. It provides the machinery for preventing or eliminating an emotional control known as neurosis. It promotes confidence and restores work habits. By determining the degree of disability interference, it establishes the possibility of return to the former occupation. By discovering abilities for other work and the capacity to profit by training, it establishes the possibility of a profitable change in job status in which residue disablement will not be a handicap.

It provides shop atmosphere and shop environment as necessary to promote the ability to carry on in actual employment. Punctuality and regularity are insisted upon within the prescribed hours for each patient. Practical mechanical and clerical work is used as the medium for activity. It is as varied as the types of work in which these men have engaged. The psychological advantage of using the kind of work in which they have participated is that it provides a maximum of job opportunity testing and restores ability and confidence on work with which they are familiar or which has common labor value. *They work to restore ability in their work on their work, and the transition, therefore, into employment is definite and needs no interpretation.* Also, it makes possible the assignment of work without noticeably attracting the patient's attention to the major purpose.

Ingenuous planning of work is necessary to remove the conscious and subconscious mental restrictions and to release the mind from dwelling upon the disability, thus giving muscular function its greatest opportunity to improve and complaints a chance to be forgotten. The stimulation of an impelling self-interest and desire to cooperate is important.

Facilities are available for job testing in drafting, carpentry, tinsmithing, soldering, radio work, painting, plastering, automobile work, electricity, plumbing, glazing, and sewing machine operating. It is job participation for practical and therapeutic purposes. In this manner pipe-threading is not only practical but an excellent exercise for injured arms, wrists, hands, and backs.

Other types of work include the care of a steam boiler and the duties of porter or janitor. The final test of disability complaint elimination for a coal passer was his moving two tons of coal from the street chute to the coal bin. Thus was he convinced he could return to his former work.

The office offers the usual range of office work tests and includes the packing and the tying-up of bundles and messenger service.

\* Private organization referred to is the Rehabilitation Clinic, 28 East 21st Street, New York City.

# THE POSTCONCUSSION SYNDROME

MORTIMER G. BROWN, M.D., F.A.C.S., Syracuse, New York

**D**URING the decade beginning about 1920, medical literature abounded in topics based upon the consideration of head injuries and their sequelae. For several years comparatively few articles pertaining to this subject have appeared. Does this mean that the last word in the evaluation of postconcussional trauma has been uttered or that the subject has been temporarily laid aside as hopeless?

To many of us, the question of what evolves when the contents of the skull meet with external violence constitutes a most interesting phase in otology. Research in the interpretation of physiologic and pathologic factors involved has not been exhausted, nor can the controversial consequences relative thereto be relegated to the medical discard.

The appreciation of what constitutes a cranial injury of significance is of paramount import not only with regard to the patient prognostically and industrially but, as many of these cases become medicolegal problems, such injuries have to be understood by those who have the responsibility of administering justice and determining fair monetary settlements. Between the injured and the referee, proper appraisal of certain symptoms by a medical examiner is most important. His knowledge of the subject under debate should be not only an appreciated service in legitimate adjustment but may determine whether a claimant will be restored to a normal self-sustaining member of society or consigned to a life of neurotic invalidism. On the other hand, proper examination should apprehend the malingerer and relieve society from the perpetual maintenance that too often results from miscarried verdicts due sometimes to a sympathetic understanding on the part of an administrator of justice and, more often perhaps, to an unsympathetic misunderstanding on the part of the medical examiner. Yet, if we are unable to create a standard by which a proper determination can be made, we must not be too critical in our condemnation. Our pity should go to the referee, who in an honest attempt to arrive at an equitable solution is confronted with a galaxy of conflicting expert opinions that convinces him that none of us knows whereof we speak.

In this paper it is not my intention to settle

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 8, 1940.

the question of a perfect evaluation but rather to agitate a desire among those who are interested in this type of neuro-otology for the establishment of some concrete rule as to what constitutes acoustic and vestibular disability, to correlate certain experimental and accepted facts, and to crystallize these findings in a simple manner that can be understood by the "occasional" otologic witness, the average medical examiner, and the referee in compensation cases.

Just what is meant by "brain concussion?" In the present state of general misconception the scope of the term seems to apply to any cerebral condition, from the mere "shaking up" of the skull contents to brain damage consisting of contusion, laceration, or hemorrhage. Whether an injured person has or has had concussion too often depends upon the personal opinion of the physician who made the first examination, possibly sometime after the accident, upon the statement of individuals who may have been witnesses to the mishap, or upon certain signs and symptoms obtained from the patient himself. Unfortunately, such an incomplete picture of the actual happenings cannot be helped. For the patient who is seen quite soon after the accident by an alert ambulance surgeon and is observed by the well-trained personnel of a traumatic receiving ward the working diagnosis is more helpful, but even here there is much to be desired.

The definition of brain concussion as a "sudden inhibition of brain-cell function, the result of external violence to the skull and characterized by a transitory loss of consciousness" is not sufficiently specific. Loss of consciousness in head injuries may embody any degree of mental confusion from mere giddiness to a complete suspension of cerebral faculties over a period of time.

It is at this point that the otologist may encounter the first controversial factor, for, if unconsciousness is accepted as a cardinal sign or symptom of brain concussion, it may be averred that without loss of consciousness there has been no brain concussion. Hence, our claim that labyrinthine imbalance is a relevant postconcussional sequela may be refuted. Yet, we find many cases with later vestibular symptoms but no unconsciousness, as it is generally interpreted.

during prohibition for a hair tonic concern, which concern dealt in alcohol. The environmental pattern and personality characteristics were thus established. Then when the bottom fell out of the prohibition liquor trade he turned to taxi driving as a means of keeping in contact with the representatives of his former environment. He only worked the better clubs, bars, and restaurants. He was seeking to compensate himself by maintaining contact with the environmental pattern that controlled his life. Unfortunately, he selected a work for which he was not adapted, although it appeared he had used his head continually but not wisely.

These repeated accidents interfering as they did with his desired association were responsible for his violent and abusive attitude. He was frustrated and he rebelled. The solution of his problem was in finding him work that would again bring him into the association and environment he desired, remove the hazard, and be something he could do. This was accomplished by training in bartending. As a bartender he is fully compensated. Even at the initiation of this training there was an immediate improvement in his mental attitude, and the carriers heaved a great sigh of relief at knowing that he was not going to return to taxi driving.

Last, a man had been awarded a scheduled loss of 100 per cent of the right hand. He had a badly damaged hand, but the total disability award had been compelled by hysteria control. He had been out of work for thirteen months and was completely discouraged. Lack of funds had broken up his home. His wife had taken their children and gone to live with friends. Debts had accumulated. He was Italian born, a manual worker with practically no education, and 37 years of age. With only one hand to use, the left one and adapted to only manual work, he was unemployable except as a watchman and then only by a sympathetic employer.

Work treatment was instituted to improve his mental attitude, restore maximum function to the disabled hand, and determine his maximum actual physical and mental work possibilities. To assist in this restoration of a more hopeful attitude and relieve his worry, an advance

of compensation was secured to pay off debts and to re-establish the family in its own home. His gratitude stimulated cooperation, and he showed increased interest and made greater effort. This improvement in his mental condition was accompanied by marked improvement in his hand. Here, no vocational training was necessary. The successful results of the work treatment re-established his employability and returned him to his previous work. He was fortunate in securing a job at a wage of \$15 more than his pre-accident wage. Despite the medical decision of permanent loss of use at the time the claim was settled, this man writes: "The company is unaware of my hand being disabled. I find that I can do the work competently and can use my hand very well."

### Relationship, Medical and Vocational Restoration

I have tried to point out, and I hope I have succeeded, that the service now rendered is constructive in accomplishment but that it indicates greater possibilities resulting from the adoption of this program of physical and vocational restoration administered with intelligent appreciation of its objective and full interrelated cooperation.

1 A better knowledge of the patient's job qualifications and physical job performance requirements.

2 Consultation between job analyst and physical analyst, with consideration of maximum physical job performance ability.

3 Physio-vocational therapy to prevent and control emotional interference and other damaging influences, to hasten recovery and complete the work of the doctor, and to secure maximum physical and vocational possibilities.

4 To return to former work and former environment when possible. To retrain when necessary and feasible.

5 To accomplish re-employment with the least amount of loss of time and vocational capacity.

### THE ANATOMICAL EXTRAS

Egad, egad, and a loud forsooth!  
Tonsils, appendix and wisdom tooth!  
Nary a one is dutiful  
To the body beautiful,  
(For all of that, I might say smugly  
The same is true of the body ugly.)  
None performs a task or service,  
Unless it is to make us nervous;  
They're standard equipment for every one  
Pater, mater, daughter, son,  
Uncle, nephew, niece, and aunt,  
Abraham Lincoln, U. S. Grant,

Rockefeller, Ford and Bendix—  
Each had tonsils and appendix  
Spinster, widow, beau and belle,  
All have wisdom teeth as well.  
The guests unwelcome, the guests uncouth—  
Appendix, tonsils and wisdom tooth  
Scientists, with deep chagrin,  
Wonder why God put them in,  
But smiling clerics say Jehovah  
Had a little sand left over

—DOW RICHARDSON  
New York Sun

# THE POSTCONCUSSION SYNDROME

MORTIMER G. BROWN, M D , F A C S , Syracuse, New York

DURING the decade beginning about 1920, medical literature abounded in topics based upon the consideration of head injuries and their sequelae. For several years comparatively few articles pertaining to this subject have appeared. Does this mean that the last word in the evaluation of postconcussional trauma has been uttered or that the subject has been temporarily laid aside as hopeless?

To many of us, the question of what evolves when the contents of the skull meet with external violence constitutes a most interesting phase in otology. Research in the interpretation of physiologic and pathologic factors involved has not been exhausted, nor can the controversial consequences relative thereto be relegated to the medical discard.

The appreciation of what constitutes a cranial injury of significance is of paramount import not only with regard to the patient prognostically and industrially but, as many of these cases become medicolegal problems, such injuries have to be understood by those who have the responsibility of administering justice and determining fair monetary settlements. Between the injured and the referee, proper appraisal of certain symptoms by a medical examiner is most important. His knowledge of the subject under debate should be not only an appreciated service in legitimate adjustment but may determine whether a claimant will be restored to a normal self-sustaining member of society or consigned to a life of neurotic invalidism. On the other hand, proper examination should apprehend the malingerer and relieve society from the perpetual maintenance that too often results from miscarried verdicts due sometimes to a sympathetic understanding on the part of an administrator of justice and, more often perhaps, to an unsympathetic misunderstanding on the part of the medical examiner. Yet, if we are unable to create a standard by which a proper determination can be made, we must not be too critical in our condemnation. Our pity should go to the referee, who in an honest attempt to arrive at an equitable solution is confronted with a galaxy of conflicting expert opinions that convinces him that none of us knows whereof we speak.

In this paper it is not my intention to settle

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the question of a perfect evaluation but rather to agitate a desire among those who are interested in this type of neuro-otology for the establishment of some concrete rule as to what constitutes acoustic and vestibular disability, to correlate certain experimental and accepted facts, and to crystallize these findings in a simple manner that can be understood by the "occasional" otologic witness, the average medical examiner, and the referee in compensation cases.

Just what is meant by "brain concussion?" In the present state of general misconception the scope of the term seems to apply to any cerebral condition, from the mere "shaking up" of the skull contents to brain damage consisting of contusion, laceration, or hemorrhage. Whether an injured person has or has had concussion too often depends upon the personal opinion of the physician who made the first examination, possibly sometime after the accident, upon the statement of individuals who may have been witnesses to the mishap, or upon certain signs and symptoms obtained from the patient himself. Unfortunately, such an incomplete picture of the actual happenings cannot be helped. For the patient who is seen quite soon after the accident by an alert ambulance surgeon and is observed by the well-trained personnel of a traumatic receiving ward the working diagnosis is more helpful, but even here there is much to be desired.

The definition of brain concussion as a "sudden inhibition of brain-cell function, the result of external violence to the skull and characterized by a transitory loss of consciousness" is not sufficiently specific. Loss of consciousness in head injuries may embody any degree of mental confusion from mere giddiness to a complete suspension of cerebral faculties over a period of time.

It is at this point that the otologist may encounter the first controversial factor, for, if unconsciousness is accepted as a cardinal sign or symptom of brain concussion, it may be averred that without loss of consciousness there has been no brain concussion. Hence, our claim that labyrinthine imbalance is a relevant postconcussional sequela may be refuted. Yet, we find many cases with later vestibular symptoms but no unconsciousness, as it is generally interpreted.

Accepting the fact that in pure or simple concussion—there being no cell death—complete recovery without sequelae should ensue, it is difficult for the industrial surgeon or referee to comprehend how and why there can be vestibular irritation over a long period of time. It is even more difficult for him to acknowledge the presence of incapacitating dizziness if the diagnosis of brain concussion has not been established, because in his records there has been no mention of loss of consciousness.

To us, the theory of brain compression with cerebrospinal damage to the vestibular nuclei or vasomotor changes with persistent prestatic changes in the blood circulation sufficient to produce vestibular hyperirritability and justify the diagnosis of recurrent attacks of vertigo seems entirely rational, but it is next to impossible to prove our point if the presence of brain concussion was denied because there was no evident loss of consciousness. Brain concussion as a clinical symptom and concussion of the brain as a pathologic condition cannot have the same meaning.

Therefore, it would seem that the general conception of the term "brain concussion" should be amended. An intermediate classification of "cerebral commotion with vestibular involvement" might clarify the situation.

It is my own opinion that if simple concussion is severe enough to produce retrograde amnesia, even without actual manifest loss of consciousness, it is sufficient to cause labyrinthine concussion with a persistent vestibular hyperirritability as the only aftermath of injury.

In arriving at the end results of traumatism to the head, the relative unimportance of basal fracture as a cause of postconcussional symptoms must again and again be emphasized. Even at the present time the diagnosis of labyrinthine vertigo often brings forth the prompt statement from the industrial surgeon that the otologist must be in error because there was no evidence of fracture demonstrable by x-ray or clinical findings. The fact that inner-ear concussion is more likely to occur without fracture of the base is well established. Fracture of the skull and cerebral concussion with vestibular involvement are entirely separate entities and must be considered as such.

While the skull fracture involving the base may seem of greater interest to the otologist because of the middle-ear complications, injuries to the vault and facial bones must not be ignored, concussion with ear symptoms or

even severe labyrinthine concussion may follow fracture of any of the head bones.

The classification of basal fractures as longitudinal, transverse, and rupture of the petrous tip seems adequate.

According to Brunner,<sup>1</sup> the longitudinal fracture starts in the tegmen of the antrum and goes forward into the roof of the eustachian tube, constituting the typical middle-ear fracture, the fracture may extend into the superior wall of the external meatus, the tympanic membrane is usually lacerated, the tympanum is partially or completely filled with blood. The middle-ear muscles, especially the tensor tympani, are frequently destroyed, the ossicular chain is ordinarily intact, but in a minority of cases the malleus is dislocated.

Diagnosis of longitudinal fracture is made by (a) otoscopic examination, (b) x-ray (if positive, proves fracture and, if negative, proves nothing), (c) the tympanic picture—is often that of a bluish black drumhead (hematoympnum), (d) bleeding from the external canal—does not prove the presence of fracture of the base—an outflow of cerebrospinal fluid is a positive indication, and (e) functional tests—show diminution of hearing (30 per cent) and slight labyrinthine symptoms.

Prognosis as to function is not good because the hearing loss may be progressive due to adhesions. As to life, the mortality ratio is about 1 out of 15 from meningitis, there is always a question, as meningitis may develop with subsequent middle-ear infections because of the fibrous repair of these fractures.

The transverse fracture starts in the region of the jugular bulb, crosses the pyramid, and ends in the anterior surface of the pyramid. The typical findings are a shattering of the roof of the vestibulum, cochlea, and semicircular canals, which are usually destroyed by hemorrhage. It is of great importance, prognostically, whether or not the lateral wall is fractured, because if fractured there is a direct pathway from the pharynx to the meninges. If the lateral wall is not fractured, prognosis is better.

Diagnosis of transverse fracture is made by (a) x-ray—is more reliable than in longitudinal fracture because the fissure is more open, (b) otoscopic picture—usually shows a normal drumhead, and (c) functional tests—show marked or complete deafness together with loss of vestibular responses.

Prognosis as to function is hopeless because the deafness is permanent. As to life, the outcome is doubtful, meningitis occurs in about 1 out of 6 cases.

### Importance of Early and Frequent Ear Examinations

There can be no doubt as to the value of early otoscopic examination in all cases of head trauma, no matter how inconsequential

the injury may seem to have been. Yet, with the possible exception of service cases that are observed by a competent traumatic personnel or the occasional private patient whose attending surgeon appreciates the worth of an otoneurologic study, we are rarely permitted this privilege. This unfortunate situation is particularly true in compensation cases that too often fall into an intermediate class and, therefore, do not have the advantage of the careful observation accorded those in the other two groups. It is usually these poorly studied cases that present the most difficult problem in arriving at the proper evaluation of postconcussional symptoms.

While we all deplore unnecessary and meddlesome manipulation within the ear canal in frank basal fractures, the determination of the source of bleeding has sufficient diagnostic, prognostic, and in some cases therapeutic significance to justify an initial inspection. The presence of blood may be extraneous, coming from laceration of nearby structures, or it may arise from an abrasion within the canal. If a definite bleeding fissure of the tympanic ring or membrane is visualized, the examination may be the determining factor in the diagnosis of skull fracture, thus, perhaps, sparing the patient an immediate "emergency" radiography. Also this early examination may help to determine whether hemorrhage is coming from a ruptured tympanic membrane due to extravasated blood in the tympanum or fracture involving the tympanic ring. Obviously, strict aseptic technic must be employed. If bleeding continues upon gentle sponging of the canal, it undoubtedly arises from fracture of the meatal wall, tympanic ring, or middle ear. If so, fracture of the base may be assumed and further examination is neither necessary nor desirable. The precise location of tympanic laceration is not required—better to be content with a diagnosis of tympanic bleeding, apply a loose sterile dressing, and avoid further inspections, unless symptoms warrant the procedure. The possible urge to control bleeding by tamponage or free the canal of accumulated blood by irrigations is to be condemned, free hemorrhage from the middle ear may be of real value in relieving intracranial pressure, irrigations can convey infection to a sterile field.

The immediate diagnosis of escaping cerebrospinal fluid is not always easy. If there is an admixture with blood—and this is the rule at early examination—the blood may appear "thin" or possibly more profuse than might

ordinarily be expected. Later, excoriation of the meatal derm may confirm the suspicion. Outpouring of clear fluid is definite evidence.

Early otoscopic inspection, furthermore, may determine the presence of a blood-filled tympanic cavity, the knowledge of which may be helpful in explaining future middle-ear symptoms. Whether or not evacuation of this accumulated blood be necessary is debatable, depending, perhaps, upon symptoms of intratympanic pressure.

Nystagmus may also be noted and will prove a valuable asset in the later-day evaluation of labyrinthine symptoms, as well as the immediate diagnosis of severe inner-ear damage.

All of this information can be obtained even during a period of unconsciousness.

If the patient is conscious and mentally clear, complaints of vertigo or hearing impairment may constitute pertinent data in the final determination of disability. Differential diagnosis between conductive and perceptive hearing loss can thus be made early, establishing or eliminating extensive inner-ear involvement.

In this way the otologist derives first-hand information not only in confirmatory diagnosis but in the interpretation of postconcussional symptoms—a fact entirely overlooked in most cases.

With but few exceptions it must not be expected that a single otologic examination, either early or later in the course of the case, will be sufficient for a proper evaluation of the postconcussion syndrome. Repeated functional tests and careful observations have to be made from time to time in order to establish the extent of damage to the ear structures and determine the presence or absence of traumatic neuroses. This is even more important in the apparently trivial injuries where a certain amount of labyrinthine concussion has taken place than in those cases giving positive signs of more definite pathologic changes.

In these "minor" traumas, recurrent attacks of dizziness, sufficient in some occupations to make work hazardous or altogether impossible, is oftentimes the outstanding complaint. To substantiate the diagnosis of labyrinthine hyperirritability, frequent examinations are absolutely necessary, as nystagmus and positive head-movement tests are not constant but may be demonstrated on occasions.

It must also be remembered that in concussion of the inner ear hemorrhage is invariably coexistent and that in the reparative processes hearing loss may be progressive,

atrophic changes involving the end-organs is a common later-day finding. In middle-ear conditions, either with or without petrosal fracture, repeated examinations are required because hearing function is quite likely to change, particularly in the young individual where gradual improvement in hearing acuity may be anticipated.

In order to arrive at a proper evaluation of postconcussional symptoms, it must be understood that these cases require intensive and, usually, prolonged study. The otologist who has not the time or inclination to devote sufficient time for a thorough consideration of the many phases pertaining to the subject should not undertake the responsibility of submitting an opinion, for a superficial examination and "snap" diagnosis add to the confusing statements so often presented before a court of justice. Independent neurologic and otologic histories and examinations are necessary, coordination of these individual findings will establish a composite picture representative of the actual condition present and leave but little room for doubt and conjecture.

The case history must be complete, specific, and accurate, based upon a careful description of the accident, the nature of injuries incurred, and all subsequent developments.

Otologically, the personal history should take into consideration the age, familial tendencies (including deafness), diseases of childhood (particularly mumps, scarlet fever, measles, and encephalitis), middle-ear infections, possible hearing embarrassment during the school age, diseases of the central nervous system, syphilis, and all illnesses having neurologic aspects. Any former injury to the head or ears, previous and present occupation, the general health, nervous stability, and character status constitute important data.

Before the patient is questioned he must be made to understand that cooperation and truthfulness are necessary if he is to be helped. An attitude of utter fairness on the part of the examining physician will gain more in the way of a comprehensive history than one of commiseration or sneering mistrust in the statements presented. The examinee should be permitted to tell his own story and describe his complaints, for in this way, unless he is unusually clever or has been well "coached," the experienced examiner can readily detect gross exaggeration or malingering. Direct reference to the common complaints of headache, deafness, inability to work or concentrate

must be avoided, indirect questions that will draw out relevant symptoms pertaining to the head and ears should be employed.

As to the injury, a detailed description of what transpired just prior and immediately following the injury should be sought from the patient and verified by authentic records, wherever possible, in order to establish the existence of unconsciousness, its intensity and duration. Even in the presence of a fair recollection of events subsequent to the accident, retrograde amnesia may be considered definite proof of brain concussion sufficient to produce later ear symptoms.

With a complaint of hearing loss it is important to have the patient's idea as to the time of onset and its degree and whether it is unilateral or bilateral, constant or intermittent, stationary or progressive. In some instances changes in the normal tonal range may be elicited. Obviously, a claim of total deafness in one or both ears must be looked upon with suspicion. Careful and repeated tuning fork tests, audiometric readings, conversation appreciation, and sometimes off-hand remarks will determine hearing ability of reasonable accuracy.

Among the more or less accepted facts relative to postconcussional deafness, the following may be emphasized.

Total bilateral deafness has never been verified.

Total unilateral deafness is rarely observed, is usually due to a transverse fracture destroying the labyrinth or acoustic nerve, and is permanent.

Loss in hearing due to labyrinthine concussion is not primarily complete, although the residual hearing ability may be of no value for ordinary conversation, but the loss may be progressive due to subsequent atrophic changes in the acoustic structures.

Hearing loss of middle-ear type, the result of a longitudinal fracture or intratympanic hemorrhage, is likely to improve in young persons but should not be anticipated in individuals past 40 years of age.

If the intratympanic structures have been severely damaged or the malleus dislocated, hearing loss will be permanent, in some cases it may be progressive due to acute or recurring inflammations.

If there was an outpouring of cerebrospinal fluid, total deafness in the ear involved may be expected in about one-fourth of the cases, the upper tone limit is usually lowered, but bone conduction is little changed.

Normal vestibular responses may be ob-

TABLE 60 (QUOTED FROM KESSLER<sup>1</sup>)

Each Ear	No Hearing with Loss of Bone Con- duction, Percentage	No Hearing with Bone Conduction, Percentage	1/40, Percentage	5/40, Percentage	10/40, Percentage	20/40, Percentage
No hearing with loss of bone conduction	40	30	30	25	20	10
No hearing with bone conduction	35	30	25	20	15	10
Spoken voice						
1/40	30	25	20	15	12	7
5/40	25	20	15	12	8	5
10/40	20	15	12	10	7	5
20/40	10	10	7	5	5	0

tained even in the presence of total acoustic loss. Tinnitus and hearing loss is dependent upon the severity of the injury.

Several attempts have been made by interested investigators to prepare a schedule to fix a percentage hearing loss that would take into consideration the individual's occupation or working ability. This has proved to be a difficult task. Probably coming nearer to the point in question is the work of Dr. Harold E. Fletcher, of San Francisco,<sup>2</sup> who in 1922 proposed the use of a "weight" scheme in computing hearing disability. This "weight," numerically expressed, represented the importance of hearing perception in various occupations and became an integrant unit in the summation of hearing time for the different tuning forks. This plan of rating was found to be workable and was adopted by the California State Commission. It was used in California for fifteen years. While this scheme has been recently replaced by audiometric deductions, its soundness in principle and its carefully determined valuation of occupational hearing requirements would seem to favor its further consideration.

In a book called *Accidental Injuries* by H. H. Kessler,<sup>3</sup> there is a general consideration of the appraisal of disability resulting from loss of hearing as follows: "The lowest schedule rating for the loss of hearing in one ear is twenty-five weeks in Kansas, and for the loss of hearing in both ears, one hundred weeks, so that loss of hearing in one ear is given a rating equivalent to 25 per cent of total loss of hearing. The schedule rating runs as high as 156 weeks for the loss of hearing in one ear in Oregon, to 416 weeks for the loss of hearing in both ears. In general, loss of hearing in one ear is given a rating from 20 to 30 per cent of the total loss of hearing. It would seem that the ratings in Oregon are altogether too high for hearing losses as compared to disabilities in other parts of the body.

"Loss of hearing either in one or both ears following injuries to the head or shaking up of the whole body in a fall from a height has been uncommon in my experience. In a small number of cases that are alleged to have occurred as a result of trauma, the majority have shown either a functional condition or the presence of an old middle-ear disease. Even in the presence of vertigo following head injuries a complaint of deafness has rarely been made.

"For the purpose of rating disabilities due to defects in hearing, 20/40 (hearing of a conversational voice at 20 feet, with one ear closed and the back toward the examiner) in either ear should be regarded as the maximum of normal hearing, and the total loss of bone conduction of sound should be considered as total deafness.

"In the presence of a functional condition in one ear, the rating should not be as high as for neurosis in general but should be equivalent to one-half the rating for organic loss of hearing in one ear. In the presence of functional total deafness, the disability should be equivalent to that allowed for neurosis in general.

"For total loss of hearing, the schedule of most states allows on the average of about 40 per cent total permanent disability. With this as a basis, Table 60 is suggested for defects of organic origin."

The subject is discussed by A. J. Fraser in his *Trauma, Disease, Compensation. A Handbook of Their Medico-Legal Relations*.<sup>4</sup> In Chapter XII Fraser discusses the rating of permanent disability and furnishes a copy of the rating schedule in use by the majority of industrial boards in Canada. The percentages stated are apparently the percentages of loss of total earning capacity. According to this schedule, the loss of hearing in both ears is equivalent to a loss of 30 per cent of earning capacity, and the loss of hearing in one ear is equivalent to the loss of 3 per cent of earning capacity. The loss of earning capacity for deafness is further analyzed as follows:

- "1. Unilateral without tinnitus or vertigo 3%
2. Unilateral with tinnitus or vertigo 5 to 10%
3. Unilateral impairment of hearing Nil
4. Bilateral deafness (total) 30%
5. Total, one ear, other much impaired 10 to 25%"

Neither Kessler's nor Fraser's figures take into consideration the nature of the occupation of the incapacitated employee. Obviously, the impairment of hearing of a stenographer or switchboard operator would result in a much greater percentage of disability than it would in the case of a person employed in an occupation not requiring such acute hearing.

I have been informed that the Council on Physical Therapy of the American Medical

Association, through its consultants on hearing aids and audiometers, is at the present time studying the practicability of formulating a standardized test for evaluating hearing loss. It is impossible to overstress this need.

The change made in the New York State Compensation Law,\* which now considers the ear as a body "member" and thus allows compensation for the permanent partial hearing loss in one ear, is a notable improvement in the original schedule, the fallacy in the amendment may prove to be failure on the part of the examiner to appreciate pre-existing ear conditions with resultant impairment in hearing.

The subjective symptoms of headache and tinnitus are of interest to the otologist only when they appear as complaints in conjunction with demonstrable ear pathology. As a part of the postconcussion syndrome, headache of variable degree is usual, whether or not it becomes an outstanding complication should depend upon the type and severity of the injury received.

While the headaches appearing in paroxysms upon change in position of the head or on exertion are said to be characteristic, particularly if the attacks are in association with dizziness, a more-or-less constant headache may actually exist if there has been brain-substance damage. Hence, headache as an otologic symptom seems indefinite, and its compensatory evaluation is essentially a problem for the neurologist.

### Evaluation of Vertigo

Vertigo, of more or less degree, is probably the most common, persistent, and troublesome of the postconcussional symptoms. To the average otologist and neurologist its precise evaluation is impossible. Even with the most experienced investigators there are differences in interpretations that complicate a clear understanding. It is certain that various vestibular responses so important in otoneurologic examinations for the diagnosis or localization of central lesions are not applicable to traumatic disease where the damage may be central, peripheral, or a combination of the two.

In history-taking, the patient's description of what may be interpreted as dizziness is often a jumble of sensations, and while we may aim to draw out the rotatory characteristic of true labyrinthine vertigo, failure to do so does not mean that the lack of this classic quality indicates a functional neurotic element. The presence of rotatory vertigo

clinches the diagnosis, its absence proves nothing.

Vertigo observed early where one labyrinth has been severely damaged by fracture or hemorrhage is quite different from that found later as a postconcussional symptom, for even in the more severe types of injury pronounced immediate vertigo often disappears within a few days due to resolution within the labyrinthine structure or, in the case of total destruction, by compensatory function of the opposite organ. Therefore, it is usually the apparently trivial head injury accompanied by moderate pathologic changes, either central or peripheral, that requires the closest study if these cases are to be separated from those of traumatic neurosis.

Much of the credit for a better appreciation of traumatic vertigo must go to Stenger, Alexander, Brunner, and others of the Viennese school, who by their experimental work and careful observations have accomplished a great deal, even though their findings are not always in harmony. The exactness by which they apply and interpret the several functional tests necessary for a diagnosis is an outstanding contribution to our present-day understanding of head traumas.

It is not within the scope of this paper to review the significance of nystagmus, past-pointing or functional tests, there should be no question as to their worth, providing the technic and interpretation is correct. In the final analysis, assuming that diseases that can give similar or allied symptoms have been eliminated as producing factors, for all practical purposes if the patient can substantiate his claim of dizziness coming on in attacks and if imbalance due to hypo- or hyperirritability can be demonstrated by caloric reactions, then vertigo as a postconcussional symptom must be accepted as a fact. And again let it be emphasized that dizziness is often a later-day complaint, coming on when the injured first returns to work, upon stooping or when working at heights, when fatigued or following alcoholic excesses.

However, it has to be admitted that many of these cases do present a definite neurologic element. A certain amount of exaggeration of complaints has to be expected, and hysterical manifestations need to be taken into account. Malingerers are frequently encountered, and certain responses, like past-pointing and the falling reactions, can be faked, but to simulate spontaneous nystagmus or control induced nystagmus would certainly be an abnormality.

The criticism by the neurologist that the otologist often goes too far in his interpretation of reactions and is overanxious to exploit what little knowledge he may have on the subject has some justification, but no neurologic examination should be considered complete without careful otologic investigation, and, if this study shows positive evidence of disturbance along the vestibular pathways, our findings may be of the greatest value to the neurologist in differentiating between the functional and organic cases. Individual examinations and a correlated opinion seems to be the best solution in the average case.

The presence of true or systematized dizziness having been established, the question of disability becomes a real problem. Assuredly, vertigo, even though of intermittent character, is a much greater handicap than deafness of any degree, for it is a menace to both life and health. Industrially, it constitutes a working hazard that if known to a prospective employer will permanently bar a person from any employment where personal or working risks have to be considered. Therefore, the opinion of the neuro-otologist, based upon his determination of the extent of vestibular damage and potential progress of the condition, becomes the most important factor in diagnosis and prognosis and furnishes the only adequate means by which the case may be properly classified. His responsibility in determining whether the injured should be compensated to the extent of total permanent disability or dismissed as a case of functional neurosis is indeed great.

It is important psychologically that the injured individual be rehabilitated at the earliest possible date, wherever possible, monetary settlement should be made as soon as is consistent with an accurate diagnosis, and the case should be closed beyond the possibility of being reopened. However, the apparent improvement of symptoms following satisfactory compensation does not prove the correctness of the diagnosis of "traumatic neurosis", many times the otologist has the opportunity of re-examining these cases years afterward, and more and more he is impressed that the postconcussion syndrome is a real disease entity.

While from the standpoint of compensation the perfect solution is quite impossible, a recognized standard whereby a percentage loss might be reached would constitute a valued and much needed addition to the schedule by which our Industrial Board renders its decisions.

In analyzing their series of 30 cases, Lanthicum and Rand<sup>6</sup> conclude "This series of concussional cases, when viewed purely from neuro-otological evidence, would seem to indicate an actual basis for symptoms of dizziness, since, in no instance, have entirely normal vestibular responses been demonstrated, and in the majority of cases the deviation from the normal was sufficiently large to class them as being distinctly pathologic."

Concussion of the brain, with ear symptoms exclusive of concussion of the inner ear and fracture, is diagnosed by Brunner<sup>1</sup> as follows:

"(a) The cochlea shows normal function, there is no shortened bone conduction.

"(b) Dizziness, as a rule, comes on in paroxysmal attacks, it is not continuous and is usually tactile in character.

"(c) Spontaneous nystagmus is slight and goes to both sides, if intensive, it is due to hemorrhage.

"(d) Disturbances in the falling reaction are either not present or slight.

"(e) The head-movements test is not constant, but from time to time is positive.

"(f) Caloric reaction is normal or shows hyperirritability."

Diagnosis is determined by positive head-movements test, by hyperirritability, or both together, if positive, patient has dizziness.

The prognosis is not good because dizziness persists indefinitely. Compensation should be based upon from 50 to 70 per cent disability.

## References

- 1 Brunner Lecture notes.
- 2 Fletcher J.A.M.A. (Aug.) 1922
- 3 Kessler Accidental Injuries, 1931 pp 449-450
- 4 Fraser Trauma, Disease, Compensation. A Handbook of Their Medico-Legal Relations, 1930, chapter XII.
- 5 Industrial Bulletin, New York Department of Labor, Dec., 1933. Re *Bednar vs. Ingersoll-Rand Co* p 580
- 6 Lanthicum and Rand Arch Otolaryng 13 785 (June) 1931.

## Discussion

Dr Charles J Imperatori, *New York City*—The group of symptoms that occur many times following a concussion of the brain is a most interesting one, and Dr Brown is to be congratulated in presenting this paper for discussion.

The possible anatomic or chemical changes that occur following such an injury to the brain structure with disturbance in its normal function produce a train of clinical manifestations, such as headache, vertigo, degrees of loss of hearing, and tinnitus, that belong for interpretation and treatment within the domain of otology. It is to the otologist, during some time of the manifestation of these clinical abnormalities, that the patient is sent. He is asked, and particularly if the patient injured is one coming under monetary compensation, to evaluate the degree of disability, state the prognosis, and define a course of treatment to induce a recovery to normal.

Association, through its consultants on hearing aids and audiometers, is at the present time studying the practicability of formulating a standardized test for evaluating hearing loss. It is impossible to overstress this need.

The change made in the New York State Compensation Law,<sup>8</sup> which now considers the ear as a body "member" and thus allows compensation for the permanent partial hearing loss in one ear, is a notable improvement in the original schedule, the fallacy in the amendment may prove to be failure on the part of the examiner to appreciate pre-existing ear conditions with resultant impairment in hearing.

The subjective symptoms of headache and tinnitus are of interest to the otologist only when they appear as complaints in conjunction with demonstrable ear pathology. As a part of the postconcussion syndrome, headache of variable degree is usual, whether or not it becomes an outstanding complication should depend upon the type and severity of the injury received.

While the headaches appearing in paroxysms upon change in position of the head or on exertion are said to be characteristic, particularly if the attacks are in association with dizziness, a more-or-less constant headache may actually exist if there has been brain-substance damage. Hence, headache as an otologic symptom seems indefinite, and its compensatory evaluation is essentially a problem for the neurologist.

### Evaluation of Vertigo

Vertigo, of more or less degree, is probably the most common, persistent, and troublesome of the postconcussional symptoms. To the average otologist and neurologist its precise evaluation is impossible. Even with the most experienced investigators there are differences in interpretations that complicate a clear understanding. It is certain that various vestibular responses so important in otoneurologic examinations for the diagnosis or localization of central lesions are not applicable to traumatic disease where the damage may be central, peripheral, or a combination of the two.

In history-taking, the patient's description of what may be interpreted as dizziness is often a jumble of sensations, and while we may aim to draw out the rotatory characteristic of true labyrinthine vertigo, failure to do so does not mean that the lack of this classic quality indicates a functional neurotic element. The presence of rotatory vertigo

clinches the diagnosis, its absence proves nothing.

Vertigo observed early where one labyrinth has been severely damaged by fracture or hemorrhage is quite different from that found later as a postconcussional symptom, for even in the more severe types of injury pronounced immediate vertigo often disappears within a few days due to resolution within the labyrinthine structure or, in the case of total destruction, by compensatory function of the opposite organ. Therefore, it is usually the apparently trivial head injury accompanied by moderate pathologic changes, either central or peripheral, that requires the closest study if these cases are to be separated from those of traumatic neurosis.

Much of the credit for a better appreciation of traumatic vertigo must go to Stenger, Alexander, Brunner, and others of the Viennese school, who by their experimental work and careful observations have accomplished a great deal, even though their findings are not always in harmony. The exactness by which they apply and interpret the several functional tests necessary for a diagnosis is an outstanding contribution to our present-day understanding of head traumas.

It is not within the scope of this paper to review the significance of nystagmus, past-pointing or functional tests, there should be no question as to their worth, providing the technic and interpretation is correct. In the final analysis, assuming that diseases that can give similar or allied symptoms have been eliminated as producing factors, for all practical purposes if the patient can substantiate his claim of dizziness coming on in attacks and if imbalance due to hypo- or hyperirritability can be demonstrated by caloric reactions, then vertigo as a postconcussional symptom must be accepted as a fact. And again let it be emphasized that dizziness is often a later-day complaint, coming on when the injured first returns to work, upon stooping or when working at heights, when fatigued or following alcoholic excesses.

However, it has to be admitted that many of these cases do present a definite neurologic element. A certain amount of exaggeration of complaints has to be expected, and hysterical manifestations need to be taken into account. Malingerers are frequently encountered, and certain responses, like past-pointing and the falling reactions, can be faked, but to simulate spontaneous nystagmus or control induced nystagmus would certainly be an abnormality.

the ossicular chain, or injury to the temporomandibular joint is not always demonstrable. Traumatic tinnitus, in my experience, is always subjective and can neither be proved nor disproved.

Next, let us analyze the vestibular symptoms. Nystagmus is objective and usually significant of real pathology. I have had 1 case, however, where the question of malingering had to be considered. Vertigo and dizziness are usually confused in the minds of the otologists. This prompted me to write Dr Isaac Jones, of Los Angeles, an authority on this subject, and to receive this reply:

"Vertigo means turning—a sense of things turning inside one's head—vertigo is limited to a sensation of turning. Gene Lewis, at the beginning of this century gave the most perfect definition. 'Vertigo is a sensation of turning contrary to fact.' Dizziness is a loose term to cover all curious sensations other than true vertigo—doz-

ens of sensations of insecurity, fear of looking out of windows in high buildings, uncertainty, instability, etc."

To summarize there remain just two objective symptoms—namely, deafness and nystagmus, neither of which is sufficient to establish either a definite pathologic lesion or a causal relationship.

We must remember that Ménière's symptom complex presents all the postconcussion syndrome symptoms without injury and with symptoms that are equally as distressing.

It is quite definite from Dr Brown's definitions and deductions that brain concussion or other head injuries are not necessary to the production of this syndrome. Nevertheless, something—mechanical, circulatory, or otherwise—causes a dysfunction of the internal ear. These symptoms often are permanent and distressing, are difficult to appraise and compensate properly, and present a field for further investigation.

## DIRECTORY OF MEDICAL SPECIALISTS

1942 Edition

**S**PECIALISTS eligible for listing in the forthcoming second edition of the Directory of Medical Specialists are urged to fill in and return promptly the questionnaires for biographic data now being mailed out by the publication office.

This Directory is the official publication of the Advisory Board for Medical Specialties, issued every two years, and listings are limited to those formally certified by any of the fifteen American Boards examining in the medical specialties. There is no charge for such listings.

The second edition is now being prepared, and will be ready for distribution early in February, 1942, with biographic, geographic, and alphabetic listings of all diplomates certified to January 1, 1942. It will include approximately 18,000 names.

The Directing Editor is Paul Titus, M.D., 1015 Highland Building, Pittsburgh, Pennsylvania, and the secretaries of the fifteen American Boards constitute the Editorial Board.

## SPOILS SYSTEM AND PUBLIC HEALTH

"The argument over government socialized medicine necessarily produces considerable confusion in the public mind," observes the *Saranac Lake Enterprise*.

"The medical profession is not, as some seem to believe, stubbornly opposed to efforts of government to aid the sick and diseased. It heartily approves of such efforts when legitimate and sound.

"It supports government hospitals where private facilities are lacking—supports government medical aid of those afflicted with mental and nervous diseases—supports the long established, excellent work done by the public health service.

"Since 1874, surprising as it may seem, the American Medical Association has repeatedly urged the establishment of a Federal department of health with a secretary who shall be a doctor of medicine and a member of the President's cabinet. It has invariably offered wholehearted cooperation in developing efficient

and economical ways and means of expanding public health and maternal and child health services.

"What, then, does the medical profession—along with qualified laymen—oppose?

"It opposes political ventures in the medical field which would inevitably and rapidly reduce public health standards—and destroy or hamper essential work in the battle against disease.

"Political domination of the medical profession would mean that the doctor's political pull was more important than his abilities as a practitioner. It would mean that medicine would become a great new field for political patronage. Thus, it would mean unnecessary death—unnecessary suffering, unnecessary illness.

"A doctor's party label has no influence on his expertness at diagnosis and prognosis.

"But, under socialized medicine, the party label would come first. The 'spoils system' would invade the public health."

Every one of the above desiderata are difficult to answer so that a proper evaluation may be given from the standpoint of the patient, the employer, and the physician.

Brook, of New York, has defined concussion as a transient loss or defect in consciousness without known pathology from which the individual makes a rapid recovery.

Trotter describes concussion as "an essentially transient state due to head injury which is of instantaneous onset, manifests widespread symptoms of a purely paralytic kind, does not as such comprise an evidence of structural cerebral injury, and is always followed by amnesia for the actual moment of the accident." I rather doubt part of this definition especially "no evidence of structural injury." Inasmuch as concussion is rarely fatal, necropsy material is not abundant for proper study.

Osnato, Gilberti, Cassasa, Wilson, Mickelman, Miller, Martland, and others have found minute petechial hemorrhages about the arterioles in the brain following *more severe* brain injuries or after repeated concussions.

Rather on the speculative side, may I make the following observations:

Much study is required in the chemical changes and metabolism of the brain. Water metabolism and brain function need investigation. We know that substances of a fatty nature, termed lipides, are present in relatively large quantities in the brain. We know that the brain does not store carbohydrates, and we also know, and have known for a long time, that vitamin deficiency causes brain-tissue changes. After much work the glycogen content of the brain is diminished 20 per cent, whereas in other tissues, such as muscle and liver, loss is 90 per cent. There have been found over twenty different enzymes in brain tissue. Any sudden jarring of the whole body or blow on the head could easily produce an interference in the chemical and hydrostatic condition of the brain substance.

With such a background and without definite pathologic changes for observation, the difficulty in evaluating these clinical symptoms that cannot be measured with accuracy, excepting that of loss of hearing and even that is only relative, is readily seen.

Nevertheless, these conditions have to be evaluated and on an equitable basis, so that justice is rendered to the patient and the employer. Much inquiry is necessary on the part of the examiner—namely, (1) general reaction to environment, (2) relationship to his present and past employer, and (3) the desire to rehabilitate oneself.

A working man receiving a concussion may feel that his employer has been negligent, is to blame, and owes him compensation for a loss of time, consequently he develops these postconcussional symptoms of headache, vertigo, vague feeling of insecurity, and a degree of loss of hearing, accompanied by tinnitus—out of all proportion to the injury received.

Comparison of some of these individuals with those who have received similar injuries in sports, such as football, hockey, polo players, cross-country riders, and pugilists, may be made. It is difficult at times to distinguish between a neurosis and a malingerer.

Too many questions or a tentative or positive diagnosis give the individual a basis to refer all his symptoms to.

Nevertheless, it would seem that the majority of those who sit in judgment of these patients, with regard to their real or exaggerated symptoms, definitely feel that the benefit of the doubt should be given to the one entitled to a compensation, provided that his symptoms following an injury appear to be real.

Definitely, the worker has been injured, and, inasmuch as our means are inadequate to measure these conditions in exact figures, approximate compensatory measures must be given. They consist of hospitalization, money, and his job when he has sufficiently recovered to continue.

There is also the safety angle that must be considered, and that is of great importance, particularly in those workers in positions where the safety of others is concerned.

I feel that no physician should assume the responsibility to declare a worker fit for duty when there is a possibility that such a "post-concussioned" worker is definitely a hazard.

I am in accord with Dr. Brown regarding the desire to standardize methods of evaluation, but I feel that careful study should be given before any conclusions are reached in any attempt of the standardization of ratings of disability, measured in terms of dollars. A proper group of otologists, general surgeons, medical men, and neurologists should give this a proper study, and their conclusions should be used as a tentative working basis.

Dr. C. Stewart Nash, Rochester, New York—From Dr. Brown's studies and from my own experience it is apparent that the difficulties arising from the postconcussion syndrome are in inverse ratio to the extent of the injury. Two persons are injured and both have ear symptoms (vertigo, dizziness, stuffiness, noise, and deafness). It is clear why the one with demonstrable head or brain injuries complains, for the more obvious the injury the less difficulty in explaining the symptoms. It is not so clear why the one with an insignificant or minor injury has the same symptoms, for the less the injury, the greater the difficulty in explaining the symptoms.

This raises the question concerning the reality of the postconcussional symptoms in the case of the minor injury. A brief analysis of these symptoms opens up further difficulties.

First, let us consider the acoustic symptoms. If present, the existence of deafness should be determined without much difficulty, as well as its extent and location. Stuffiness that may result from eustachian tube closure, interference with

TABLE 2—PEPTIC ULCER CASES WITH GROSS HEMORRHAGE

Type of Ulcer	Number	Medical Treatment	Deaths	Mortality Rate, Percentage	Surgical Treatment	Deaths	Mortality Rate, Percentage
Duodenal	139	134	4	2.9	5	1	20
Gastric	29	27	8	28.9	1	1	100
Total	168	161	12	7.4	6	2	33.3

It seemed futile to try to draw the line where gross hemorrhage ended and massive hemorrhage began in this group, as they were seen by different observers. However, certain criteria for the diagnosis of peptic ulcer with gross hemorrhage were established. Cases were accepted only if the diagnosis of peptic ulcer was eventually established usually by x-ray and in some cases by surgery or autopsy. The criteria in this series for the gross hemorrhage were (1) hematemesis, melena, or both, (2) symptoms of acute loss of blood varying from weakness to actual shock, and (3) a fall in the hemoglobin and red blood count. The latter did not always occur at the time of admission because of factors of dehydration, shock, etc.

Since the course and treatment of peptic ulcer have varied depending on whether the ulcer was located in the duodenum or stomach, the duodenal and gastric ulcers were studied separately (Table 2).

The duodenal ulcer group was subdivided into those patients who received one or more days of starvation and those who received some sort of feeding, either just milk alone or the Meulengracht type of regimen on the first day of their hemorrhage. The duodenal ulcer patients were also divided into those with their first hemorrhage and those with recurring attacks of bleeding (Table 3).

The gastric ulcer group was not subdivided because of its relatively small number.

### Duodenal Ulcer Group

In this group there were 139 cases with gross hemorrhage. One hundred and twenty were men and 19 were women, a ratio of approximately 6 men to 1 woman. Of this group, 134 received medical treatment alone and 5 were eventually operated upon. In the group treated medically there were only 4 deaths due to bleeding, giving a mortality of 2.9 per cent. The cases operated upon for persistent bleeding had 1 death, a mortality of 20 per cent (Table 2, Fig. 1).

The duodenal ulcer cases that were treated medically were separated, as already stated, into two groups, those receiving nothing by mouth during the first day or more of active

TABLE 3—MEDICAL TREATMENT OF DUODENAL ULCER WITH GROSS HEMORRHAGE

Number of Hemorrhages	Number of Cases	Deaths	Mortality Rate, Percentage
First	110	3	3
Recurrent	29	1	3.6
Type of Regimen			
Starvation	99	3	3
Immediate feeding	35	1	3

bleeding and those who were fed immediately. The type of feeding varied from milk to the regimen outlined by Meulengracht.<sup>1</sup> Ninety-nine were treated, more or less, by the orthodox method, and three of those patients died, a mortality just under 3 per cent. Thirty-five patients were fed immediately with only 1 death resulting from bleeding. One died of peritonitis from a perforation after the bleeding had ceased and was not considered a hemorrhagic death. The mortality in this group was also a little less than 3 per cent (Table 3).

These duodenal ulcer patients were also subdivided into those who were admitted for their first hemorrhage and those who had one or more previous attacks of gross bleeding (Table 3). Three patients out of 110 died during their first attack of gross hemorrhage, a mortality of 3 per cent. Twenty-nine people had two or more gross hemorrhages. There was only 1 death in this group, a mortality of 3.6 per cent.

Four patients died on a medical regimen. Case 1 was a 57-year-old syphilitic woman who had no intravenous fluids and died suddenly. Case 2 was a 32-year-old woman thought to have a mesenteric thrombosis, and consequently she was subjected to x-ray studies and was not treated as a bleeding ulcer. Case 3 was a 54-year-old man who died before the real source of trouble was realized. Case 4 was a 36-year-old man who had a purulent cystitis in addition to massive hemorrhage.

The question of the effect of transfusion on the mortality rate cannot be decided. Two of the 4 who died received 500-cc transfusions and intravenous fluids. But there were numerous 500-cc. transfusions among the people who recovered. However, the records did not

# THE MANAGEMENT OF GROSS HEMORRHAGE IN PEPTIC ULCER

## A Report of 168 Cases

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SINCE the advent of Meulengracht's series of articles<sup>1</sup> reporting a definite decrease in the mortality of gastrointestinal hemorrhage by instituting immediate and liberal feedings, many physicians have become confused as to whether to feed or not to feed a bleeding peptic ulcer. Before and since these papers, there have been numerous articles on bleeding peptic ulcer, both as to mortality rate and as to treatment. From the standpoint of mortality, it has been of interest to note that statistics on hemorrhage have varied from 1.3 to 58 per cent. From the standpoint of treatment, Meulengracht<sup>1</sup> has not been the first to use or suggest feedings during the period of bleeding.<sup>2,3</sup>

Because of this confusion, Crohn and Lerner<sup>4</sup> reviewed the Mount Sinai Hospital records of cases with acute massive hemorrhage from peptic ulcer. In their paper they criticized many of the former reports and suggested reasons for gross errors in the various statistics in the literature. They further discussed the results of these competing methods of medical treatment. They believed that, because of the difference in criteria for ulcer hemorrhage, the results with the present type of immediate liberal feeding during the period of bleeding were not necessarily better than the orthodox method of starvation during the active bleeding, provided transfusions, etc., were not used too indiscriminately. In their study they found a total mortality of 7.5 per cent—6.8 per cent in duodenal ulcer and 10.3 per cent in gastric ulcer. Blackford and Cole<sup>5</sup> in turn criticized Crohn's statistics and mortality rate, stating that the arithmetic appeared grossly in error. They believed that Crohn's mortality rate for massive hemorrhage was actually higher than stated. Even if we discard all the papers in which the work does not seem careful and the diagnosis of peptic ulcer as the cause of the bleeding is not convincing, there still remains much confusion in the mortality statistics. The main cause for this seems

to be that different authors use different criteria for massive hemorrhage and for gross hemorrhage, some use these words interchangeably and do not attempt to differentiate between these two types of bleeding. Thus, it seems difficult to judge the efficacy of the starvation or feeding regimen from the mortality rates of different investigators. We believe this can only be evaluated from results of the same authors before and after the institution of the liberal feeding during the active bleeding.

Meulengracht<sup>1</sup> showed a mortality of 6 to 7.9 per cent in his cases on the old regimen of starvation as against 1.3 per cent with his present plan of liberal feeding (Table 1). LaDue<sup>6</sup> found a general mortality rate of 6.3 per cent as compared to 1.3 per cent in a group who received immediate feeding as outlined in his paper. He used a mixture of gelatin, lactose, and orange juice every one to one and one-half hours during the active bleeding with a more liberal diet after the bleeding ceased. Woldman and Polan<sup>7</sup> treated 101 patients with colloidal aluminum hydroxide, either by tube or mouth, during the active period of bleeding and had only 3 deaths, a mortality rate of 3 per cent. They compared this with a group of 38 cases of massive hemorrhage treated at the same hospital during a five-year period preceding the inauguration of his treatment. During that time there were 11 deaths, a mortality rate of 29 per cent. This seems impressive although the conditions were not comparable. The criteria and the observers appeared to be different in these two groups, although this was not stated specifically in their paper.

Because of this confusion we decided to study the status of the peptic ulcer cases with gross hemorrhage occurring in the Strong Memorial and Rochester Municipal hospitals.

TABLE 1.—COMPARISON OF MORTALITY STATISTICS

Author	Starvation Percentage	Immediate Feeding Percentage
Meulengracht	6-7.9	1.3
LaDue	6.3	1.3
Woldman	28	3
Our duodenal ulcer series	3	3

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 9, 1940.

From the Departments of Medicine and Surgery the University of Rochester School of Medicine and Dentistry.

Let us first consider the physiology and rationale and then outline a treatment

The rationale of the management of gross hemorrhage has been ably discussed by LaDue<sup>4</sup> and Browne and Mc Hardy.<sup>7</sup> When gross hemorrhage occurs, the blood pressure falls to adjust itself to the loss of blood volume. With this, the carotid sinus and aortic reflex may be excited and anoxemia may occur in the medullary centers. Filtration through the kidneys may be lowered with resulting urea retention. Locally, there is contraction of the middle fibromuscular coat of the arteries and clot formation in an attempt to stop the bleeding. If the artery is eroded on end, this contraction helps to stop the bleeding. If the artery is eroded laterally this opening may be widened by such contraction and add to the difficulty of the clot to bridge the gap. An erosion into a vein should be more readily closed by the clot because of the lower pressure.

The important consideration in the treatment is not to interfere with those factors that stop the bleeding, i.e., the lowered blood pressure and the clot formation. However, there are certain dangers, the blood pressure may sink too low and shock may continue, the clot may be displaced by peristaltic waves of the stomach or duodenum or may be digested by the gastric juice. The presence of blood itself in the stomach of some people may be an irritant and may produce nausea, retching, and increased peristaltic activity, thus playing a part in the mechanical dislodgment of the clot. In other people the shock and acute loss of blood may be the cause of the nausea and retching. The blood, in addition, may stimulate gastric secretion beyond its power of neutralization of the excess acid, and digestion of the clot may ensue.

Whether an empty stomach is at rest is a mooted question. Carlson<sup>8</sup> says it is not. Thus, starvation would not avoid mechanical dislodgment. Moreover, as long as the ulcer bleeds, the stomach is not empty, thus, the chances of an empty or quiet stomach is slight.

Realizing these various factors, what method can one use to gain the best results? The statistical report in our own study does not answer the question. The number of cases in our series that were fed during bleeding is still too small to draw conclusions. By and large, the literature tends to point to a lowered mortality in the group that were fed. However, it can be said that the mortality was not increased by feeding. Moreover, in the average case of gross hemorrhage the patient will not

be exsanguinated, and sufficient clot formation will occur to bridge the gap to stop at least the first bleeding. The important thing seems to be to prevent this clot from being dislodged or digested in order to prevent a recurrence of the bleeding. Alvarez<sup>10</sup> believes that the danger from digesting the clot is greater than that from dislodging it mechanically. If the factor of digestion is all-important, then neutralization of the gastric secretion is an important step in the treatment. It is this factor that can explain the good results claimed by Meulengracht,<sup>1</sup> Woldman,<sup>5</sup> and others. Frequent feedings or the use of a neutral agent, as colloidal aluminum hydroxide, either by continuous drip or frequent administrations, prevent the digestion of the fibrin and is apparently the rationale behind this treatment. If this is so, Woldman's<sup>5</sup> method of continuous drip should offer the greater protection by its constant neutralization of the gastric acidity while at the same time avoiding the mechanical factors that solid food itself may produce. Moreover, with a tube in the stomach one may be able to determine when the bleeding has ceased. The end of the tube must not be much lower than the cardiac orifice in order to avoid a mechanical danger of dislodging the clot (Fig 1). Most ulcers are in the duodenum or, if in the stomach, are in the lower half of it and will not be injured by this technic. In addition, one can lower the head and keep the patient on his back. This helps to keep most of the gastric juice in the cardiac part of the stomach and tends to put the stomach at rest.

If one is reluctant to place a tube in the stomach or if the patient is intolerant to tubes, this position is still of aid. If no tube is used, it is best to start early feedings by mouth to neutralize any excessive acid that may be produced from the stimulation of the blood. For this purpose it is not necessary to start with immediate liberal feedings as Meulengracht<sup>1</sup> has described. Here it seems more rational to follow the diet described by Andresen<sup>6</sup> in 1927 and 1939. The gelatin mixture has been used with the idea that gelatin combines readily with hydrochloric acid, is soothing and not overstimulating in the production of gastric juice, and is supposedly an excellent coagulant. Gelatin can be dissolved in water to which lactose and fruit juices can be added for nutritional purposes, or the gelatin can be combined with milk, cream, and glucose and flavored to suit the taste. After the active bleeding has ceased, high caloric gruels and milk mixtures can replace the gelatin solutions. Of course, colloidal aluminum hydroxide, etc.,

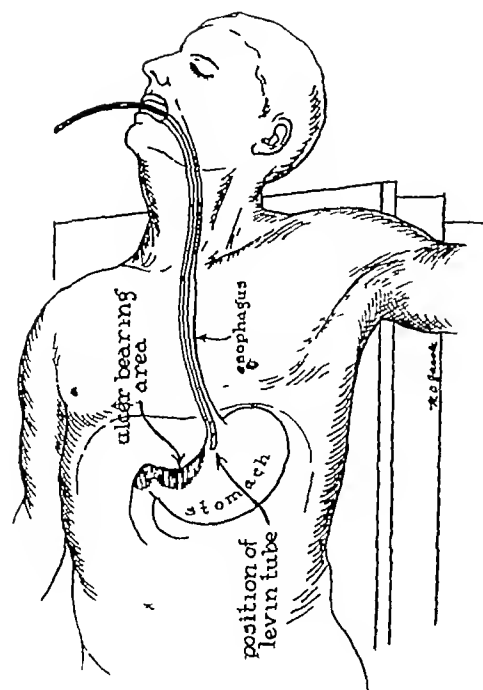


FIG 1

reveal how carefully and how much time was taken to give these transfusions

### Gastric Ulcer Group

In the group of gastric ulcer patients there were 29 cases of gross hemorrhage. Twenty-seven were men and only 2 were women. Twenty-seven patients received medical treatment alone, and 8 of these died, a mortality of 28.5 per cent. Only 1 was operated upon for massive bleeding with a fatality.

### Discussion

There are some striking points noted in this study. The mortality for gross hemorrhage from duodenal ulcer was low, slightly less than 3 per cent. This was so in those on a starvation regimen and in those who received immediate feeding.

There is little difference in the mortality rate in the duodenal ulcer series in their first attack of bleeding as compared with recurrent gross hemorrhages. Thus, in our group of duodenal ulcer patients we are forced to say that the mortality is not appreciably greater in a second or third attack of gross bleeding. However, if a patient tends to have recurrent gross hemorrhages, the summation of the mortality of each attack naturally adds to the total risk. Moreover, these people tend to

TABLE 4—AGE INCIDENCE OF THE MEDICAL MORTALITY IN PEPTIC ULCER HEMORRHAGE

Age Group	Duodenal Ulcer			Gastric Ulcer		
	No of cases	No Deaths	Percentage	No of cases	No Deaths	Percentage
20-40	48	2	4	2	1	50
40-55	51	1	2	15	2	13
55-	35	1	3	11	5	45
Total	134	4	2.9	28	8	28.5

have more recurrences of bleeding. We feel that repeated gross hemorrhages are a definite indication for eventual surgery. But the indication for immediate surgery is the same as for the first attack, i.e., only if the bleeding persists on the medical regimen. However, surgery in these repeaters should be done after the bleeding has stopped and after the patient is in good condition.

It will be noted from Table 4 that duodenal ulcer hemorrhages occurred more frequently in the age groups from 20 to 40 and 40 to 55 and slightly less often thereafter and that gastric ulcer bleeding occurred more frequently in the groups from 40 to 55 and 55 upward. This is parallel to the age incidence in duodenal and gastric ulcers.

The outstanding fact in bleeding from gastric ulcer is that although its relative frequency is comparable to that of duodenal ulcer the mortality is definitely higher. In our group the medical mortality of gross hemorrhage in gastric ulcer is 28.5 per cent as against only 2.9 per cent for duodenal ulcer. Crohn and Lerner<sup>2</sup> in their series had a mortality of 10.3 per cent in the gastric ulcer cases as compared to 6.8 per cent in the duodenal ulcer patients. Their total mortality for gross hemorrhage from all peptic ulcer cases was 7.5 per cent. Our total mortality was 7.4 per cent. The factors in the higher death rate from gastric ulcer may be variable. Perhaps mechanical displacement of the clot occurs more readily because of large and more vigorous peristalsis in the stomach. Perhaps digestion of the clot can occur more readily in the acid medium of the stomach than in duodenal ulcer, where the bathing secretions are alkaline.

### Medical Management and Its Rationale

Considering our results and those of Crohn and Lerner<sup>2</sup> and considering Meulengracht's<sup>1</sup> low mortality, Woldman's<sup>6</sup> success with aluminum hydroxide, and the results reported by Andresen,<sup>6</sup> Browne and McHardy,<sup>7</sup> LaDue,<sup>4</sup> etc., how should one manage the individual case of gross hemorrhage from a peptic ulcer? Should one starve them, should one feed them, or should one operate upon them?

rhage, the immediate effect of which the patient has survived, but persistent bleeding continues many days after the onset of the acute hemorrhage. Usually there is a persistence of ulcer pain or distress. The stools may remain frankly tarry, or, the persistence of bleeding may manifest itself only in a strongly positive test for occult blood. A variant of this type of bleeding occurs when the stools clear up for a short time and then give evidence of recurrent hemorrhage while the patient is being kept in bed on a rigid ulcer regimen. Care must be taken not to mistake the effect of administered iron for occult blood in the stool. In both of the above groups the continuation of the hemorrhage is a danger signal. Either the ulcer is particularly active or the bleeding artery does not become securely closed with a thrombus. We believe that in this small group of cases operation is not only justifiable but may be definitely lifesaving. Five such cases occurred in our duodenal ulcer series, 3 because of continuous bleeding and 2 because of immediate recurrences of oozing which continued. In all of these cases the evidence of bleeding continued for more than ten days before operation was deemed necessary. Four of these patients survived and the bleeding was controlled, while 1 died after operation, giving a mortality of 20 per cent. Thus, a persistent loss of blood over a period of many days (even two or three weeks) is the only type of bleeding from an ulcer which seems to warrant operation directly for its control. The sixth case was operated upon the second day of hemorrhage not because of his bleeding but because symptoms suggested a perforation. An exploratory laparotomy revealed no perforation, and nothing further was done due to the patient's poor condition. The patient continued to bleed and died shortly after the operation. Including this case the total surgical mortality in our duodenal ulcer series was 33.3 per cent.

The point we wish to emphasize is that this patient would not have been operated upon for bleeding if the probability of perforation had not arisen. This case represents a patient early in the course of an acute dangerous loss of blood, a condition to which the physiologic processes of the body had not had sufficient time to adjust. It is generally recognized that surgery offers great hazards at this time. In a week or more the body adapts itself much better to the blood loss.

The problem of recurrent episodes of major hemorrhage, though important, is a separate one from the one that we are considering for

immediate surgery. The recurrent hemorrhage should be managed in the manner already described. However, repeated such episodes may be evidence of an active ulcer and one that often is difficult to control adequately on a conservative regimen. In some of these people, if the blood regenerates rapidly the elective operation may be carried out during the same hospital admission as the major hemorrhage. Ten such cases occurred in our present series, with 1 death. However, with a cooperative patient it seems better judgment usually to defer the operation until complete blood regeneration has occurred when the patient is in the best possible condition.

### Summary

One hundred and thirty-nine cases of duodenal ulcer and 29 cases of gastric ulcer with gross hemorrhages have been reviewed.

One hundred and thirty-four of the duodenal ulcer cases were treated medically with a mortality rate of 2.9 per cent. The mortality was approximately the same both in those cases put on a starvation regimen and in those given immediate feedings.

Twenty-eight cases of gastric ulcer with gross hemorrhage were treated medically, with a mortality of 28.5 per cent.

The combined medical mortality was 7.4 per cent for bleeding peptic ulcer in this series.

The rationale and fundamental principles of medical management were discussed.

The only type of patient that should have surgery for immediate control of hemorrhage is when bleeding continues for many days (even two or three weeks). In this small group operation may be a lifesaving measure.

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### Discussion

Dr Henry A. Rafsky, *New York City*—The more I see of bleeding peptic ulcers, the more I

can be given in addition. If one is still reluctant to start with any feeding, frozen milk cubes can be given by mouth instead of cracked ice. This will keep the mouth moist and the milk dripping in the stomach will have some neutralizing effect.

Naturally, other factors besides the question of clot digestion and clot displacement must be considered. Even if the hemorrhage does not appear dangerous, the patient must be at rest. Morphine and sodium luminal can be used hypodermically for this purpose.

Unfortunately, many cases will have marked blood loss and will be in shock. This must be treated. The patient is kept warm, morphine, as already stated, is indicated, and the moot question of the use of intravenous fluids to replace the blood loss will arise. Crohn and others mentioned by him<sup>2</sup> are adverse to the use of transfusions except as an extreme measure, and they believe the mortality has been increased thereby. They believe that the drop in blood pressure is a protective mechanism and that to disturb this without due cause may be harmful. Browne and Mc Hardy<sup>7</sup> believe that transfusions are lifesaving measures and think it is physiologic to replace lost blood with blood if the volume is less than 40 per cent. In our duodenal ulcer patients with gross hemorrhage, transfusions were used fifty-four times in amounts varying from 30 to 600 cc, the usual quantity being 250 to 500 cc. A person can die from too low a blood volume and clinical judgment will be necessary as to when transfusion should be instituted. It is probably best to withhold blood at first but to resort to it if the pulse rate continues to increase and the blood pressure continues at a dangerous shock level. If intravenous fluids are necessary, blood is probably the best medium, and its introduction should be slow in order not to increase the blood pressure suddenly or to its original level.

The discussion of the medical management of the bleeding ulcer has been limited practically to the first few days immediately following the gross bleeding, and this period can be called the period of active bleeding. The period immediately following the actual cessation of the hemorrhage may be called the second period of the medical management. Whether the management of the period of active bleeding consisted of no food, intubation with continuous aluminum hydroxide drip, or frequent administrations of milk or gelatin mixtures, frequent liberal feedings should be the mode of procedure in this second period. Now we can follow Meulengracht's<sup>1</sup> idea of a

diet rich in scraped meats, milk, bread, butter, cream, cheese, eggs, vegetables, tea, etc. The argument that the Meulengracht's<sup>1</sup> regimen helped clot formation, brought about rapid convalescence, and prevented nutritional loss may be true, but, if this regimen is started on the third day after the onset of the hemorrhage, no great nutritional harm has been done, and no harm has been done to the clot if the patient has been at rest and other neutralizing factors have been at play. It is the old type Sippy regimen of starvation and gradual step-up of the feedings that lasted two to three weeks which does the nutritional harm. This regimen should not be used.

### Surgery

So far we have been concerned with the medical regimen. The part surgery should play in gross hemorrhage from peptic ulcer must be discussed.

In the duodenal ulcer series surgery was not employed as an emergency measure in an attempt to stop a rapidly fatal hemorrhage. There are a few cases in which the physical conditions are such that the bleeding from the eroded artery may not stop, an erosion on the lateral wall or arteriosclerosis may prevent the artery eroded on end from contracting. If these facts could be determined with accuracy in the individual case, then it would be wise to use the massive transfusion method now available and operate on such individuals. However, many of the patients in this series who came in with massive hemorrhage and developed profound shock survived on a medical regimen, although it was feared that they would not. There is nothing in the physical examination of the patient before he is actually moribund and there is no test available which will differentiate in acute hemorrhage the patient who will ultimately survive from the one who will continuously and rapidly bleed to death. We are convinced that, even with the aid of improved methods in giving huge quantities of blood, the operative mortality for massive hemorrhage in duodenal ulcer is greater than the mortality of this condition under the conservative treatment outlined—7.4 per cent in the whole series but only 3 per cent in the duodenal ulcer. Therefore, it seems wise to continue our policy not to operate as an emergency in a desperate attempt to control a massive hemorrhage.

There is, however, one type of bleeding from an ulcer which we believe does usually call for operative interference. The bleeding episode usually starts with a major hemor-

# A CASE OF PAPILLARY CARCINOMA IN A HORSESHOE KIDNEY

JOHN S FITZGERALD, M D , Utica, New York

**H**ORSESHOE kidney is an uncommon congenital anomaly of great clinical interest and the problems of diagnosis and treatment are among the most intriguing in urology. Such a kidney is more likely to develop other lesions than a normal kidney. Many tumors, most of which have been hypernephromas, have been found associated with this anomaly. A review of the literature has failed to reveal a report of the occurrence of papillary carcinoma in a horseshoe kidney. For this reason, the following case is presented.

## Case Report

The patient, F P , a white man, aged 50, was referred to me by Dr R C Ainsworth on March 3, 1939, with a complaint of severe pain in the left side and gross hematuria of twelve hours' duration. There had been two previous attacks of hematuria, nine months and five months previously. These had ceased spontaneously and had not led him to seek medical advice. He had been treated, however, off and on for four years for "kidney trouble." The remainder of the past history had little bearing on the case. Twelve years earlier, all the upper teeth were removed for Vincent's angina. Seven years prior he fell and suffered a back injury that involved the right but not the left side. The x-rays taken at the time showed an osteoarthritis of the lumbar spine. No mention was made of the kidney shadow. He had lost 15 pounds in six months, this he ascribed to hard work and a severe attack of right sciatica just prior to the onset of present illness. His mother had died of carcinoma of the uterus.

On physical examination an obese man of middle age was found. He appeared acutely ill and in severe pain.

**Head.** The pupils were equal, round, and reacted to light and accommodation, sclerae were normal. The ears and nose were normal, but the upper teeth were absent.

**Neck.** No glands or pulsations were noted. Thyroid was not palpable.

**Chest.** The heart was normal in size and shape, and the sounds and rhythm were normal. Vessels were soft. The blood pressure was 120/80.

**Abdomen.** The abdomen was soft. There was marked tenderness and slight rigidity on deep palpation in the left flank and at the left costovertebral angle. No mass or kidney was palpable on either side. The bladder was not palpable or tender.

The external genitalia were normal except for

blood staining. The prostate was of normal size, shape, and consistency.

The urine was dark red, cloudy, and alkaline, with a specific gravity of 1.010. The albumin was 3 plus, and there were a few leukocytes and many erythrocytes. Tests for sugar and acetone were negative. The blood Wassermann was negative.

Cystoscopy was performed immediately. A slim clot, the cast of an ureter, was found in the bladder. At meatoscopy, normal urine appeared from the right ureter and grossly bloody urine from the left. Indigo carmine appeared in medium concentration on the right in ten minutes. None was noticed on the left. A number 6 catheter was passed easily to the kidney pelvis on each side. The specimen was clear on the right and bloody on the left. Smear and culture did not reveal any organisms.

The first film revealed the catheters to ascend in rather straight fashion to reach the level of the kidneys on each side then turn sharply outward and dip downward.

The left pyelogram revealed only a portion of the pelvis and the lower calyx to be filled. Above this there was an irregular infiltration of the dye that bore no resemblance to a kidney pelvis. The ureter below was straight and well filled. The right pyelogram was indistinct but showed a pelvis close to the midline and a rotated kidney. The minor calices were clean cut and well filled.

The complete blood count revealed a hemoglobin of 66 per cent, red blood cells, 3,250,000, and white blood cells, 13,400, of which 76 were polymorphonuclears and 18 per cent were small lymphocytes.

Because of the severity of the hemorrhage, nephrectomy was performed without delay. The preoperative diagnosis was kidney tumor. The horseshoe was not discovered until operation.

Under cyclopropane anesthesia, the patient was placed on his back, and an 8-inch left pararectus incision was made. A 6-inch crossbar was made so that the entire incision was T shaped. The extraperitoneal space was dissected until the psoas muscle and almost the midline was reached, but it was impossible to find the left kidney. The patient was turned on the side and the bar of the "T" extended. The kidney was then found and freed easily, except at the lower pole where the attachment was discovered. The ureter crossed anterior to the bar and was severed. Between clamps the isthmus was divided. The stump of the isthmus was covered with fat, anchored by number 00 chromic continuous suture. Dissection of the pedicle was difficult due to the fact that the blood supply entered in four places, each of which required individual clamp and ligature. No single large

am convinced that the treatment of each case must be individualized. Various factors must be taken into account when trying to arrive at any conclusions in these cases. During the past six months I have seen more bleeding peptic ulcers at the Lenox Hill and Beth Israel hospitals than in any other similar period. Whether or not this is due to the severity of the winter (or whatever the cause is) I have not been able to ascertain. Furthermore, these bleeding cases have been severe ones. When we compare mortality statistics we must bear in mind that some patients do not seek medical treatment until they are almost exsanguinated. This was demonstrated by a patient who came into the hospital with a hemoglobin of 28 per cent, he had been bleeding about one week before admission. Other patients seek advice at the initial onset of the symptoms. With regard to the various methods of treating bleeding ulcers, I have tried the Meulengracht diet, duodenal feeding, intragastric drip, and the Sippy plan. The results are about the same, irrespective of the method

employed. Dr Einhorn many years ago gave high caloric and high protein feedings through the duodenal tube, and I still use this method in bleeding ulcers. With regard to the Meulengracht diet, I have seen 2 cases in the past five months in which the bleeding started again after the patient had been on the diet about one week. Another point to be emphasized is the question of prerenal azotemia. The determination of the nonprotein nitrogen is important. In a previous article Dr Weingarten and I showed that the nonprotein levels have prognostic values. The dehydration in prerenal azotemia must be overcome. If the nonprotein nitrogen level does not fall, irrespective of the therapeutic efforts, the prognosis is bad. The nonprotein levels do not have any relation to the anemia. With regard to transfusions, I am not in agreement with those observers who say that transfusions are not indicated. I feel they are definitely indicated to overcome the anemia and the dehydration resulting in azotemia, but small and frequent transfusions should be given instead of large ones.

## They Can't Wait Much Longer

### Stricken Civilians in England and Greece Need Your Help Today

The Medical and Surgical Supply Committee of America desires to send 1,000 emergency operating sets in khaki canvas rolls and 1,000 fitted first-aid metal cases. These units have been approved, both as to contents and containers, by the surgeons and physicians of this committee. Bombed hospitals, emergency first-aid posts, air-raid shelters, and recently opened auxiliary provincial hospitals are in dire need of instruments to replace losses made almost nightly!

This is a frank appeal to you to come to the assistance of the stricken civilian population of Great Britain and her Allies. If you can interest anyone or any group of people (clubs, factories, commercial organizations, service groups) in your vicinity in the purchase of one or more of these sets, please let us know. Each set will bear a plate with the donor's name, if desired. The price, delivered in England, insurance and shipment included, is \$200 for the Emergency Operating Set and \$70 for the First-Aid Fitted Case.

*Please make checks payable to Arthur Kunzinger,  
Treasurer, Medical and Surgical Supply Committee of  
America, 420 Lexington Avenue, New York City*

cured. The wound cleared quickly under a Dakin's dressing. A right sciatica developed which responded to sacral injection and vitamin B. He was discharged thirty-four days following operation with a small granulating area remaining in the wound. This filled in rapidly and he returned to work about three months postoperatively.

A check-up examination was performed nine months later. At cystoscopy, the bladder was normal. There was no evidence of growth in the bladder, and the left ureteral orifice was normal. A uereterogram of the left side showed smooth walls in the stump of the ureter. Indigo-carmin was given and did not appear in twenty minutes from the right. A few days later a gross phenolsulfonphthalein test was performed and revealed 35 per cent in the first half hour, 15 in the second, 8 in the third, and 3 in the fourth, a total of 61 per cent. Intravenous urogram was performed, a picture seven minutes after the injection of 30 cc of diodrast revealed no left kidney shadow. On the right side the kidney shadow was well visualized, particularly in its upper and lateral portions. It was larger and broader than normal and the inner border approximated the vertebral column. The lower pole was squared, but there was no definite bar seen. There was moderate lipping of the vertebrae due to arthritis. The pelvis was well filled, with calices arising both medially and laterally and at the inferior portion so that the picture resembled a porpoise. At thirty-five minutes, the bladder showed beginning filling and the kidney was beginning to empty. The ureter was not visualized.

At present there is moderate diastasis of the rectus muscle medial to the wound. For this he wears a belt. Otherwise, he is in good physical condition and states he feels better than he has in years.

The preoperative diagnosis was kidney tumor, the fusion not being detected until operation. Because of the obesity of the patient the pyelograms were quite indistinct, and it required a good deal of imagination to see the connecting bar even after you knew it was there. The left pelvis was greatly distorted by the tumor. The right showed the bizarre pelvis and the lack of rotation. Both kidneys were low and close to the midline. In the postoperative intravenous urogram, this was fairly well demonstrated.

Many excellent treatises have been written on horseshoe kidney, the monograph of Gutierrez<sup>1</sup> being particularly helpful. Although pelvic changes are usually diagnostic, probably the best aid in diagnosis is visualization of the bar by intravenous urography in the early pictures.

This anomaly is so frequently the site of superimposed pathology that infection and

stone are frequently found. Hypernephroma has been reported many times. Squamous cell carcinoma has been reported by Primrose,<sup>2</sup> Melen and Gaspar,<sup>3</sup> Willan,<sup>4</sup> Nicholson,<sup>5</sup> and Perrier.<sup>6</sup> Morley<sup>7</sup> reports a benign papilloma in the horseshoe kidney. These were studied at postmortem examination. De Vries<sup>8</sup> reported a case of stone, papilloma, and hypernephroma in a patient who was operated upon with good results. Kimbrough<sup>9</sup> reported a case of papillary adenocarcinoma in an operative case of horseshoe kidney.

## Conclusion

A case report of a papillary carcinoma occurring in a horseshoe kidney has been presented.

289 Genesee Street

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## Discussion

Dr W. J. Kennedy, *Utica, New York*.—I want to congratulate Dr Fitzgerald on his fine presentation and skillful management of a difficult case.

Even when horseshoe kidney is recognized preoperatively, surgery on such a kidney is usually technically difficult because of the fixed position of the fused pole and the bizarre arrangement of the blood supply.

Gutierrez has described what he calls, "the horseshoe kidney syndrome." This consists of abdominal pain located in the epigastric or umbilical region, a history of life-long constipation, and recurring attacks of urinary disturbances of the type that are prone to develop in the presence of obstruction, stasis, or infection. The first two are always present in some degree in horseshoe kidney due to the fact that the ureter always crosses some portion of the kidney, usually the isthmus, and infection occurs as the natural sequel to obstruction. Bilateral pyelograms are essential in diagnosis, and intravenous pyelograms are perhaps more valuable than retrograde, since occasionally one is enabled to visualize the isthmus. One should suspect fused kidney (1) when the kidneys are low without the usual ureteral changes suggestive of ptosis, (2) when the kidneys are situated abnormally close to the spine, and (3) when there is rotation of the pelvis and inversion of the calices causing some or all of them to point toward the spine. When fusion



Fig 1 Anterior view showing pelvis on anterior surface. The isthmus is at the lower left-hand corner. The four pins are in the arteries.

vessel was present. The kidney was excised. A cigarette drain was placed in the bed of the kidney and a tube drain to the isthmus. The wound was then closed in layers, using number 2 chromic running suture to the fascia and muscle, silk retention and continuous to the skin.

The kidney was enlarged to about twice the normal size, particularly in the upper portion where it felt quite firm. Much of the pelvis was extrarenal and firm to palpation. The ureter crossed anterior to the horseshoe bar. At the lower pole on the medial side was the stump of the isthmus, which was firm. Four small arteries provided the blood supply to the kidney. These entered in varying relation to the pelvis. On section the entire upper two-thirds of the pelvis was filled with a papillary growth that obstructed all the upper calices and filled this entire area. The remaining unfilled portion of the pelvis was small and irregular and drained only the two lower calices. In the lower portion of the papillary growth an erosion was present. This was undoubtedly the source of the severe hemorrhage.

The report of the pathologist was papillary carcinoma. The State Institute at Buffalo confirmed this. I am indebted to Dr J E Ash of the Carcinoma Registry for the following excellent description: "The tumor involving apparently only the pelvis consists of papillae of

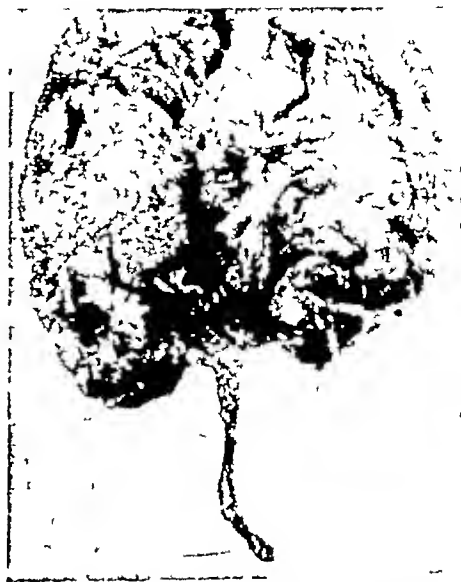


Fig 2 Interior view showing carcinoma filling the upper two-thirds of the pelvis.

considerable length having very delicate but vascular connective tissue cores and layers of transitional type of epithelium which are very broad at the base but thinned out somewhat toward the tips. The epithelium is rather uniform in size and shape showing no tendency to differentiation toward the squamous, mitoses are not frequent, the basal cells are rather uniformly palisaded, but the overlying cells, particularly in the thicker layers, are apt to be more disorderly in arrangement. There is no evidence of penetration beyond the basement membrane. Graded on the same basis as bladder tumors this would be a carcinoma, papillary, grade I. The block taken from the kidney at the line of fusion shows, under the low power particularly, the complete separation of the two kidney masses by connective tissue. Under the high power it can be seen that the glomeruli and large blood vessels are either at or very close to this line of separation. There are foci of lymphocytic infiltration into both kidney masses and focal areas of fibrosis, arteriosclerotic in origin in both. The diagnosis here would be fused horseshoe kidney, arteriosclerosis."

The postoperative course was stormy. After a favorable preliminary response he developed a cough, with expectoration, rales, and severe distention. The temperature rose to 104 F. He responded to intensive treatment that included continuous nasal gastric suction and intravenous fluids. A week postoperatively his general condition was good, the urinary output was satisfactory, but the limb of the T incision was infected. A fascial slough with undermining occurred in this area. No urinary drainage oc-

# TUMORS OF THE BLADDER

HENRY G. BUGBEE, M D, New York City

THE most controversial subject in urology is tumors of the bladder, for conclusions and current opinion regarding the results obtained from various methods of treatment are based more upon personal opinion than upon well-established facts. Not until we standardize our classification of bladder tumors so that we are talking of the same type of tumor for which we are applying various methods of treatment will it be possible to appraise correctly the true value of each method.

It seems to me that a simple and understandable classification of bladder tumors is one recently published from the Cleveland Clinic. In this classification tumors are divided into papillary and nonpapillary infiltrating tumors. The papillary tumors are subdivided into noninfiltrating, so-called benign papillomas and malignant papillomas, while infiltrating papillomas are subdivided into papillary carcinoma and infiltrating papillary carcinoma. The nonpapillary infiltrating carcinoma represents the broad base, sessile, nodular, often ulcerated growths with evidence of invasion of the bladder wall. In this general discussion rare types of benign tumors of the bladder, such as fibroma, cystadenoma, etc., also sarcoma, may be excluded.

We probably all subscribe to the premise that all tumors of the bladder are potentially malignant. The arguments that have so often been given for considering so-called benign papillomas as grade I malignancy seem well founded. Broder's gradation of tumors according to their cellular differentiation seems to be the best index of the inherent malignancy of the tumor and has been adopted by most pathologists and clinicians as a working basis although the variability in the histologic structure of different areas of the same tumor is well recognized. As a basis for prognosis, the reliability of this gradation is open to serious question.

Two elements handicap us at the start in dealing with bladder tumors. One is that they occur in individuals of late, middle, or advanced age in a large proportion of cases. Second, because of the often late appearance of symptoms, a diagnosis is frequently made only when the pathology, both local and general, is well established. Hematuria, the most

common primary symptom, is generally painless and intermittent and is too frequently treated lightly, while dysuria, frequency, and changes of the urinary stream except in the presence of tumors encroaching upon the vesical outlet are late in their appearance.

Unquestionably, our important diagnostic procedure in bladder tumors is a cystoscopic examination, which should be made in every case of hematuria unless there is some definite reason to the contrary. Painstaking cystoscopic study of a bladder tumor—noting its position, size, and general appearance, the condition of the tumor pedicle and bladder wall, the vesical neck, and ureteral orifices—gives us more information than can be obtained by any other single method of examination. Also, if multiple tumors are present, they will be detected at once. This information, however, should be supplemented by data acquired through excretory urography by which means the possible existence of a kidney or ureteral tumor may be demonstrated and the bladder papilloma shown to be an implant. The presence of renal infection with or without hydronephrosis, ureteral dilatation, and impaired kidney function may be ascertained in this manner. These factors may well influence the type of treatment to be instituted. Furthermore, defects of bladder outline caused by bladder tumors are as a rule more satisfactorily demonstrated by excretory urograms than by cystography, the size, position, and number of growths, as well as possible infiltration of the bladder wall, often being outlined in this manner. A search by physical examination and x-rays for the possible presence of metastases should supplement the urologic study, and a knowledge of the condition of the blood stream is essential at all times.

Given a diagnosis of a bladder tumor, what will be our treatment? A cursory review of the literature upon this subject for the past thirty-five years reveals a continuous succession of new methods, the immediate enthusiasm for each innovation and the subsequent difference of opinion as to its real value give one the definite impression that on the whole the results have been disappointing.

At the beginning of this period some type of surgery was our only recourse. Then fulguration was introduced and met with decided favor. As its limitations became apparent, a

occurs in the lower pole, the lower calices are often close together, and occasionally one or both may actually cross the spinal column. This fact has been utilized by Gutierrez in an ingenious manner. He constructs a triangle, using a line drawn between the tips of the innermost calices as a base and the midpoint of a line drawn between the iliac crests as the apex. In the normal kidney the angle is about 90 degrees, while in the horseshoe kidney it varies from 7 degrees to 35 degrees and is usually less than 20 degrees.

Papillary tumors of the renal pelvis are not especially rare but may be somewhat difficult to differentiate preoperatively. They are identical in every respect save that of location to papillary tumors of the bladder. They may be either single or multiple, may arise from a slender pedicle or a broad base, they have the same tendency to form implants and, like bladder papilloma, tend to metastasize late. The only constant symptom of tumor of the renal pelvis is hematuria. In papilloma the bleeding usually occurs early, while in squamous carcinoma bleeding usually occurs late. Pain, which is usually sudden in onset and which may closely simulate that of calculus disease, occurs fairly frequently.

This was noted in Dr. Fitzgerald's case, and it was the chief symptom in a patient of mine operated on recently.

Blood clots in the kidney pelvis cause pyelographic filling defects easily mistaken for pelvic tumor. But clots will usually retract or pass, and a repeat pyelogram after a short interval will clear up this point.

Pyelitis cystica may present a pyelographic appearance closely simulating the irregular mottled appearance sometimes present in papilloma. This similarity, however, is more apt to be confusing when the lesion extends into the ureter than when it is confined to the kidney pelvis.

In addition to the hydronephrosis which always occurs in papillary tumor of the kidney pelvis, there are two other signs that to me are of great diagnostic value. Bleeding may be started or aggravated by the passage of the ureteral catheter, and in a recent case the urine became perfectly clear after the catheter had passed beyond the tumor which was situated at the ureteropelvic junction and, secondly, a peculiar mottled appearance of the pelvis when filled with pyelographic mediums which are not too dense to obscure the irregular contour of the papillary growth.

## BETTER BABY

I am a modern baby who must face  
Inheritances of the human race,

But medicine and science both combine  
To make this prophylactic life of mine

I'm glad I need not worry over sties  
Because of argyrol dropped in my eyes

And fingerprints will guard my name from doom,  
While I enjoy my air-conditioned room

At breakfast time I'm taken from my crib  
To don my waterproof, transparent bib

Then mashed bananas, milk, tomato juice,  
Strained vegetables in cans all serve my use

Tucked in my sleeping bag, the zippers run  
Up to my neck, while napping in the sun

But I don't mind if days are cold and damp,  
I eat my sun, or get it from a lamp

My arm of punctured serums has a sore  
To keep that yellow sign from off our door

And relatives who in my glee would bask  
Must hide behind a germ protecting mask

But streamlined gadgets cannot alter me,  
My temper is old-fashioned as can be

And when I shriek my loudest false alarms,  
I want to snuggle close in mother's arms

—REBA RAY  
New York Sun

## ADVICE FROM AN EXPERT

No one can accuse former Governor Alfred E. Smith of indifference to the public welfare or hostility to beneficial social change, remarks the *New York Medical Week*. During his Albany years he fought successfully for many important welfare measures which profoundly influenced social attitudes not merely in this state but in the nation. In spite of his opposition to many aspects of the New Deal, he supported unemployment relief and old-age pensions.

It is therefore as a friend of the public as well as the medical profession that Mr. Smith speaks when he urges the latter to organize itself frankly as a "pressure group" in order to protect its interests. The former governor predicts that the Federal Government will first seize control of the life insurance companies and then follow through with obligatory prepayment for sickness. Unless physicians "organize and see that they are represented in any discussion of the subject, some socialistic group in Washington will give us a form of health insurance that will not be as good as you [i.e., the medical profession] can give us."

Mr. Smith correctly asserts that "organized minorities can exert great pressure" in government today—whether for better or for worse. The medical profession does not place self-interest above the common good. On the contrary, it is convinced that the preservation of its independence is to the public advantage, and that the defeat of compulsory sickness insurance is as essential to the general welfare as to its own. Under these circumstances it should not hesitate to follow Mr. Smith's advice and fight the pressure of the minority seeking obligatory insurance with organized counter-pressure of its own.

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At the beginning of this period some type of surgery was our only recourse. Then fulguration was introduced and met with decided favor. As its limitations became apparent, a

combination of fulguration, diathermy, and surgery had its day. Radiation in the form of radium and x-ray therapy followed and was extensively employed by urologists in general. With the advent of transurethral resection, the resectoscope has come into common use as a rapid and efficient means of removing pedunculated bladder tumors and applying fulguration. Finally, cystectomy—thanks to the advancement made in surgical technique—has been resorted to more often, and now we hear murmurs of refrigeration as a therapeutic measure. X-ray therapy has taken on new life with the inception of machines of higher voltage.

Combinations of these various methods of treatment have been employed by nearly all urologists, and for this reason it has been extremely difficult to appraise accurately the true value of any one method. Furthermore, the results obtained have been so confused by the lack of a uniform clinicopathologic classification of tumors that reports of favorable results have often been misleading. Proper facilities for carrying out certain methods of treatment, especially radiation, are not often available. These are a sufficient supply of radium, a high-voltage x-ray machine, and a group of co-workers including a chemist, physicist, pathologist, and roentgenologist, all of whom are so essential for the satisfactory execution of this type of therapy. Unquestionably, urologists who can command such working facilities may be expected to obtain much better results from this method of treatment than can those who have had less experience and are handicapped through lack of equipment and associates. Likewise, urologists of wide surgical experience and unusual technical skill should obtain better results from surgery as applied to tumors of the bladder than the less experienced and less skillful operators. The same applies to transurethral operative procedures. Therefore, one must be understanding and liberal in evaluating these various methods of treatment, making due allowance for the personal element that enters into the reports of individual urologists.

Just where do we stand today with regard to the application of these various methods of treatment? Unquestionably, each case should be treated individually, the type of treatment being fitted to the case and being dependent upon the size, position, and classification of the tumor as determined by cystoscopic examination and biopsy, as well as a knowledge of the state of the upper part of the

urinary tract acquired by excretory urography. There is little difference of opinion with regard to the efficacy of fulguration in the treatment of villosa papillomas of low-grade malignancy, and in this regard the rapid removal and destruction of these growths with the resectoscope has largely supplanted the slower method of fulguration with small electrodes. The only divergence of opinion in the treatment of this type of tumor is whether in multiple or large papillomas open surgery is not sometimes preferable. As in the transurethral resection of the prostate, with experience one becomes more expert in the use of the resectoscope and finds it possible to tackle and eliminate larger growths with entire satisfaction. Transurethral excision of bladder tumors requires skill and experience, for it is necessary to remove all of the tumor or tumors and fulgurate the pedicle or base. I have found it possible to free entirely a bladder of multiple growths that, in several instances, almost completely filled the bladder cavity. This is done by repeating the resection at weekly intervals until clear. Such bladders when once freed of growth have been kept clear by observations at regular intervals, occasionally destroying small recurrences (which means new growths in other areas of the mucous membrane as they have appeared). Open operation in these cases is unsatisfactory since recurrences are the rule, and they seem to occur sooner following open surgery than after transurethral resection. I have not seen a case of this type in which I felt that a total cystectomy was indicated.

Transurethral excision has also been carried out satisfactorily in a series of cases of malignant papilloma and papillary carcinoma even when infiltration of the pedicle has taken place. Such tumors when located in the trigon and adjacent to the vesical outlet have in 8 instances been resected along with the prostate. With the elimination of the prostate allowing better vision and more room for manipulation, it has been possible to resect the tumor pedicle. All of these patients have remained free of growth up to five years with 1 exception, this patient succumbing to a heart attack after four years of freedom from tumor. A papillary carcinoma located in the fundus or lateral walls of the bladder and not encroaching upon the vesical outlet or both ureteral orifices may often be removed by surgical resection of the bladder wall. Transplantation of a ureter enhances the danger of kidney infection. It is in this type of tumor that radiation has been extensively employed.

by some, radon seeds being inserted into the pedicle after the growth has been destroyed or excised. X-ray therapy has also been utilized in these cases, the most recent modification of its administration being the direct application of roentgen therapy by means of a tube inserted into the open bladder, the rays emanating from the end of the tube.

I have employed radium for many years both singly and in combination with surgery and fulguration, but recently I have used it less and less because it seemed to increase infection, and dysuria, frequency, and local pain were often distressing. Of late, x-ray therapy has been used more frequently after resection of the tumor. From 50 to 60 per cent of cures may be expected in the papillary type of cases, notwithstanding the fact that occasionally what seems to be a comparatively small intravesical growth proves to be but the apex of a growth having a broad base in the deeper layers of the bladder wall or in a large extravescicular tumor.

Infiltrating, nonpapillary carcinoma of the bladder presents a different problem. When such a tumor is located in the fundus and is movable, bladder resection may be undertaken, but unfortunately over two-thirds of these tumors are located on the posterior wall and involve the trigon. Rarely when a tumor is placed in this location is the case suitable for partial or complete cystectomy, for the growth has probably extended beyond the bladder and metastases are already present. Radiation has been extensively employed in this class of cases, although such tumors are apparently radioresistant in many instances. The superficial growth may often be removed with the resectoscope, and x-ray therapy may be given with beneficial effect to the extent of helping a slough to separate, healing ulcerations, and relieving pain. Two recent cases of this type are worthy of brief mention.

### Case Reports

A woman, aged 72, entered the hospital complaining of dysuria, frequency, and great difficulty in voiding, the urine contained blood in small clots. Cystoscopic examination revealed an ulcerated, infiltrating growth that involved the trigon and lateral walls of the bladder, at least half of the bladder wall being invaded. The growth extended along and surrounded the urethra and could easily be palpated through the vaginal wall. The growth was fulgurated and the superficial layers were removed with the resectoscope. Biopsy showed a grade IV carcinoma. Urination became so difficult that a cystostomy was considered, but it was decided

to first try radiation by x-ray. The patient began to improve at once, and in four months no evidence of the growth was visible on cystoscopic examination or could be palpated through the vagina. Urination became free and the urine clear. I examined this patient one week ago and her condition remains the same. She has been free of symptoms and the bladder has been clear for eight months. Her general physical condition is excellent.

A second case, a man, aged 69, was operated upon elsewhere, and an infiltrating carcinoma surrounding the vesical neck and extending to the lateral walls and base of the bladder was removed superficially by diathermy applied through the open bladder. There was a rapid recurrence of the growth, and when I first saw him he had almost constant urination amounting to incontinence. Dysuria was distressing and the urine contained aropy mucus, pus, and blood. Local treatment gave no relief. Cystoscopic examination showed an ulcerating, infiltrating growth involving the trigon, vesical neck, and base and lateral walls of the bladder. He was placed in the hospital and given deep x-ray therapy. The first doses were massive ones and caused severe toxemia, after which treatments were given intermittently and in smaller doses. He began to improve and passed large sloughs of tissue which at times completely blocked the urethra necessitating their instrumental removal. After two months these sloughs disappeared, and in three months from the beginning of the x-ray treatment no growth was visible on the surface of the bladder. He has now gone four months without treatment and, while he has a contracted bladder and voids about once an hour, he is free from pain or discomfort. The urine is usually clear and free from odor and is acid. He has gained 20 pounds in weight and says that he feels better than he has in years.

I do not cite these 2 cases as cures. One cannot say that nests of cancer cells are not still present in the bladder wall. But, if they are present, they are encased in fibrous tissue. I know of no other treatment that would have given an equally satisfactory temporary result.

Infiltrating growths are said to be radioinsensitive. It seems to me that it is difficult to generalize to this extent in speaking of bladder tumors and that one must be guided by observing the reaction to treatment which takes place in the individual case. Tumors of low-grade malignancy may occasionally be resistant to all types of treatment, while others of high-grade malignancy will from time to time surprise us by reacting at once to various types of treatment. Two urologists associated with the same institution in which

radiation is extensively employed have divergent opinions. One says that x-ray radiation has failed, that alone it is not sufficient, that most bladder tumors are radio-insensitive, and that better results may be obtained by routinely employing radium than by any other method of treatment. The other observer, while employing radium to a certain extent, is definitely more enthusiastic regarding the benefits to be derived from deep x-ray therapy. The recent statement by Colonel Ash of the Bladder Tumor Registry is of interest. He says "I have been impressed by the severity of secondary reactions in those cases that have been subjected to irradiation, particularly deep x-ray therapy. It also seemed that results obtained in those clinics where radiation was used at a minimum were at least equally as good as those in clinics where irradiation was used routinely." Further "In view of the fact that as a class these tumors are resistant to irradiation and considering the possibility of serious damage from the irradiation, it would seem a mistake to use it routinely, and this in spite of the number of glowing accounts of the results that have been obtained through irradiation. It seems very doubtful that any case that could be cured by irradiation could not be cured by skillful surgery, which includes fulguration, of course."

We still have a difficult problem in the treat-

ment of bladder tumors. It seems to me, however, that we can feel definitely encouraged with the results now being obtained in all types of pedunculated tumors. The removal of these tumors with a resectoscope and treatment of the base by fulguration or radiation in one form or another, also occasional open resections of the bladder, will give us a goodly proportion of cures—estimated by various observers as 50 to 60 per cent of five-year cures. These figures correspond with my own experience, 78 per cent of our cases of this type are alive.

In the management of infiltrating, nonpapillary growths we are faced with a different problem. Here the possibility of bladder resection or total cystectomy is to be borne in mind should the growth still be localized to the bladder wall and the upper part of the urinary tract show little infection or dilatation. If infection and dilatation are present, cutaneous ureterostomy may be the procedure of choice. At present, x-ray therapy seems to offer us slightly more encouragement than formerly in this class of cases, and various combinations of treatment are often indicated.

Early diagnosis is still the prime requisite in the treatment of bladder tumors, and operation is but the first step in the cure, a rigid follow-up being absolutely necessary in every instance.

2 East 54th Street

## THE SIMPLE SERUM

*(Dr Charles Armstrong of the United States Public Health Service says the common cold stimulates white blood cells in the nose and these immunize mice against encephalitis and poliomyelitis. Colds probably are protectors of men as well, he believes.)*

If you worry that a virus

Will cause havoc in your iris,

If you fear to let coryza get a hold,

Just remember that the giants

Of the Hippocratic science

Have found virtue in the ordinary cold

If your thoughts are dark and chilly

At the mention of bacilli

And the specter that the common snuffle throws,

You are likely prejudicial—

Doctors find it beneficial

To possess at times a ruddy, running nose

For the irksome nasal thickness

Kills the hug of sleeping sickness,

Kicks the paralytic germ right in the pants,

So if you have infection

Of the mucus, it's protection,

You can have it—I prefer to take a chance!

—DOW RICHARDSON  
Chicago Daily Tribune

## BUT THE PUBLIC LIKE 'EM

Margaret Widdemer, the poetess, contributes to *The Saturday Review* the following rather caustic comments on "A Recent Form of Literature"

There ought to be a Bull or Proctor  
To check these books about a Doctor

Doctors Galahad, Bradley, Roger,

The Doctor's Date, the Doctor's Lodger,

The Doctor's Villa, Buggy, Jungles,

(Oddly, never The Doctor Bungles)

The Doctor's Odysseys, Citadels,

The Doctor Silent, The Doctor Tells,

The Doctor Remembers, The Doctor Forgets,

The Doctor's Dog and his other pets,

The Doctor's Son, The Doctor's Wife,

The Doctor Looks at Love and Life

(They're all as noble as can be,

Not one of them would split a fee

Or yank a passing tonsil out

Upon a merry sporting doubt

Or leave retractors in your tummy

Through lightheart haste to bridge or rummy.)

They're charming books—yes, that's quite clear—

But, Doctor, I've been sold the idea.

The one called "Doctor Here's Your Hat"—

Couldn't we leave the thing at that?

# Diagnosis

## CLINICOPATHOLOGICAL CONFERENCES

DEPARTMENTS OF MEDICINE AND PATHOLOGY, NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL, COLUMBIA UNIVERSITY

Date February 18, 1941

Presiding Dr Irving S Wright

### History

DR. MAURICE BRUGER This patient was a woman 50 years of age. Because of her incoherence, the history was obtained from her son.

Twenty years ago her left foot was amputated because of trauma. Three years ago she had a number of clay-colored stools. No detailed history of associated symptoms was obtained but at that time dyspnea was present on exertion. Blood chemical studies and gallbladder and gastrointestinal x-rays were negative at that time, but the electrocardiogram was reported as showing some evidence of myocardial damage. For the past five years she had subsisted largely on Coca-Cola and candy.

Seven days before hospitalization she suddenly became short of breath and complained of severe generalized pain. Rectal temperature was 104.6 F (40.4 C), pulse rate was 130 per minute, and the respiratory rate was 46 per minute. The family physician was consulted and a diagnosis of bronchopneumonia was made. Sulfapyridine (1.0 Gm. every four hours) was given, but no beneficial effects were noted after three days. Shortly thereafter it was discovered that the patient had taken the contents of three boxes of "Ex-Lax." On that day she became jaundiced and there was marked abdominal distention. Eight hours after the ingestion of the "Ex-Lax," a diarrhea developed. She also began to expectorate thick yellow sputum. Disorientation ensued which made hospitalization necessary.

On admission, the patient was found to be acutely ill, disoriented, and dyspneic. There was a moderate icterus of the scleras. Dehydration was apparent by loss of skin turgor. No petechiae were found. The pharynx was moderately injected. The lungs were clear throughout. The heart borders could not be accurately determined because of poor cooperation. There was a faint systolic murmur over the aortic area which was not transmitted. The pulse rate was 124 per minute and the blood pressure was 168/84 mm. of mercury.

The abdomen was distended. The liver, spleen, and kidneys were not palpable. A 2 plus pitting edema of the hands and of the right foot was present. Tenderness of the calf muscles was elicited on pressure. Complete neurologic examination could not be performed because of lack of cooperation.

The urinalysis showed a trace of protein but no sugar or acetone. Microscopic examination revealed 2 to 3 red blood cells and 4 to 5 white blood cells per high-power field. No bile pigments were present in the urine. On admission, the blood urea nitrogen was 48.0 mg. per hundred cubic centimeters, the nonprotein nitrogen 73.5 mg., with a urea ratio of 65 per cent. After the administration of fluids, the urea nitrogen and nonprotein nitrogen dropped to 22.0 mg. and 49.0 mg. per hundred cubic centimeters, respectively, with a urea ratio of 45 per cent. Total serum proteins were 5.4 Gm. per hundred cubic centimeters, serum albumin, 2.1 Gm., and globulin, 3.3 Gm. with an A/G ratio of 0.64. On admission the icteric index was 30. This increased to 44.6 after nine days. The van den Bergh test was strongly positive, both directly and indirectly. The serum cholesterol was 260 mg. per hundred cubic centimeters, the cholesterol esters were 80 mg., and the ester ratio was 31 per cent. The hemoglobin fell from 13.6 Gm. on admission to 9.7 Gm. on the tenth hospital day. During this time the patient received approximately 5 Gm. of sulfathiazole daily. (The free blood sulfathiazole was 8.9 mg. per hundred cubic centimeters.) The white blood count fluctuated between 29,000 and 10,000, with an average neutrophilia of 85 per cent. Diagnostic agglutinin studies for typhoid, paratyphoid, and undulant fever were negative. The electrocardiogram showed a sinus tachycardia and a slight depression of ST<sub>1</sub> and ST<sub>2</sub>. The T waves were isoelectric in all four leads. The report of a blood culture was not available until after the death of the patient.

After hospitalization the patient ran a septic type of temperature ranging from 99 F (37.2 C) to 103 F (39.4 C). The respiratory rate was increased to about 26 per minute. For the

first four days there were changes in the physical findings in the chest. These consisted of rales and rhonchi in both lung fields, but no dullness was present. Examination of the sputum revealed no pneumococci after mouse inoculation, but a few colonies of hemolytic streptococci were isolated. The administration of sulfathiazole led to a slight reduction in temperature. A portable x-ray of the chest showed an infiltration of the left lower lobe with generalized congestion in the balance of the lung fields. On the sixth day of hospitalization the icterus had apparently disappeared to a large degree. Transfusions were given because of a progressive anemia. On the eighth day of hospitalization the patient suddenly became markedly cyanotic and dyspneic. The pulse rate was 130 per minute and the quality thready. There were numerous moist rales heard over the left base posteriorly. A loud pleural friction rub was palpable and audible over the entire right chest. Twenty-four hours later the friction rub disappeared. The patient gradually weakened and died on the twelfth hospital day.

## Discussion

DR. IRVING S. WRIGHT: This case is presented as a clinical diagnostic problem so Dr. Duryee, who is to open the discussion, has no information regarding the pathologic findings. These will be presented later.

DR. A. WILBUR DURYEE: There appear to be several possible solutions to this diagnostic problem. Certain things, however, are outstanding, and in analyzing this case we must discuss these points. In the past history and available laboratory findings an outstanding feature was the inadequate diet, and one wonders what bearing this had on the whole picture. Apparently her diet was deficient in vitamins, and a history of avitaminosis can be established. The second noteworthy point in her past history is that there must have been some pathology in the region of the liver, pancreas, or gallbladder because of the history of clay-colored stools. There is some evidence to indicate that cardiac disease was present.

The outstanding points in the acute illness are the acute onset, jaundice, the orthopnea, tachycardia, septic temperature, and the steady decline over a period of twenty-two days. The effect of sulfathiazole and phenolphthalein on the course of the illness should also be considered.

In the course of the disease the interesting findings that we must consider are (1) the mental signs, (2) the high icteric indices, (3)

the septic temperature, (4) the abdominal distention, (5) the edema, not only of the lower extremities but also of the upper extremities, (6) the hematuria, (7) the nitrogen retention, and (8) the progressive anemia. I should like to discuss each one of these points and outline the various possibilities that may account for these findings.

The mental signs may be toxic, chemical, or infectious in nature or they may be secondary to a cerebral accident. The icterus may be accounted for by either of the two drugs given. It may be on a toxic basis or due to an obstruction of the biliary flow or chronic passive congestion. The distention remained through the entire course and may be due to pathology in the pancreas. Apparently there was no intestinal obstruction. The edema can be explained on the basis of the inverted albumin/globulin ratio and the poor nutritional history. In the kidney picture there is insufficient evidence to give one an idea of true nephrosis, although the possibility of a glomerulonephritis with a large nephrotic component must be considered. The low specific gravity and the red blood cells in the urine are significant. The hematuria may be due to the sulfathiazole, chronic passive congestion, or nephritis. The septic temperature is something that cannot be overlooked, and in my opinion we are dealing with an acute infection although the focus is not immediately apparent. The cerebral findings are insufficient to explain the picture. Perhaps pathology in the pancreas, liver, or gallbladder is responsible. It does not look like a purely renal affair because of the type of acute onset. Two important organs remaining are the lungs and the heart. The outside physician made a diagnosis of bronchopneumonia. The heart seems to me to be the most logical site for the infection. In view of the past findings, there may be a cardiac lesion with a superimposed staphylococcal infection. The differential diagnoses may be outlined as follows:

1. Endocarditis, probably staphylococcal because of the acute form, the extremely high temperature, and the improvement in her general picture when sulfathiazole was administered. The leukocytosis dropped from 29,000 to 10,000, and there was a general tendency to improve although there was a flare-up later. The cerebral symptoms may be explained by the fever or toxicity from the whole infection.

It is hard to explain the amount of icterus she had on a purely cardiac infectious basis unless she had an embolic obstructive lesion.

in the liver That is one item that does not fit the picture very well

There are several questions I should like to ask. Did she develop any petechiae? What did the blood culture show? And did she develop an enlarged spleen or any acute abdominal condition?

2 Although the acute onset and the generalized systemic reaction make it doubtful, we should add to our diagnostic list one or more of the triad of acute pancreatitis, cholecystitis, and liver abscess

3 The third diagnosis, because of the lung picture, is bronchopneumonia, but I believe in this case it was terminal The pleurisy heard may have been secondary to the bronchopneumonia The secondary anemia could have resulted from the sulfathiazole or from the infection

4. In addition, she had another condition—avitaminosis There was a low protein intake which would account for the inverted A/G ratio

5 She also had generalized arteriosclerosis with hypertension

These seem to me the most logical diagnoses One other possibility may be a neoplasm of the lung which grew slowly on the left side but suddenly blocked the bronchus, giving an acute atelectasis, but this does not sound plausible

### Dr Duryee's Clinical Diagnoses

1 Acute bacterial endocarditis, probably staphylococcus

2 Hypertensive cardiovascular disease

3 Bronchopneumonia

4 Avitaminosis

Dr WRIGHT Before we proceed to Dr Richter, are there any physicians here who would like to add to the diagnostic list?

Dr TERESA MCGOVERN This case presents many of the features seen in some of the patients at Welfare Hospital with generalized vascular lesions Both periarthritis nodosa and disseminated lupus may well be added

Dr. MILTON B ROSENBLATT Pyelonephritis

Dr ALFRED LILIENFELD Suppurative thrombophlebitis, with liver abscess

Dr WRIGHT Does anyone here know whether phenolphthalein and the sulfonamide group are more toxic when used together than when used separately?

Dr HERBERT K ENSWORTH So far as we know the sulfonamides can be given with any other medication

Dr WRIGHT Dr Bruger, will you please

answer the three questions Dr Duryee asked?

Dr BRUGER The patient did not develop any petechiae Frequent examination failed to reveal enlargement of the spleen The blood culture done on December 2 showed streptococci with a narrow zone of incomplete hemolysis Eight hundred and thirty-six colonies were counted in one plate

### Pathology

Dr MAURICE N RICHTER The principal lesion is acute bacterial endocarditis of the aortic valve There are no other important findings in the heart There is no underlying valvular lesion of any type, and the valve cusps were normally formed The liver showed some rather curious yellowish areas on the cut surface but they could not be interpreted on gross examination The spleen was enlarged, weighed 490 Gm, and was somewhat softer than usual The kidneys were not abnormal on gross examination The gallbladder showed nothing of interest

Sections of the vegetation of the aortic valve show a leukocytic and fibrinous exudate, with bacterial colonies along the edge of the vegetation These organisms are gram-positive Some of these colonies are extremely large These findings are typical of acute bacterial endocarditis In the heart there are a few small areas of acute focal myocarditis The kidneys have small infarcts, and one section shows a blood vessel that is completely blocked by an embolus There are no lesions in the glomeruli themselves such as are usually seen in subacute bacterial endocarditis The sections of the liver are interesting because they show an extensive central necrosis Occasionally, one sees small bile ducts adjacent to these necrotic areas with leukocytes in the lumen and infiltration around the ducts This liver condition is found in many cases of infection and is not specific for any one type of organism or lesion It is somewhat more extensive in this case than is ordinarily seen

### Pathologic Diagnoses

Acute bacterial endocarditis of aortic valve  
Bacteremia with metastases (Streptococcus hemolyticus)

Infarction of kidney

Central necroses of liver

Acute cholangiolitis and pericholangiolitis

Jaundice

Lobular pneumonia

Acute fibrinous pleurisy

Acute splenic tumor

DR WRIGHT I think that since Dr Duryee had no previous knowledge of the case and it was a difficult diagnosis to make he should be congratulated

DR BRUGER Were there any areas of infarction in the lung?

DR RICHTER No, there were not

DR ENSWORTH Was there any evidence of where this infection entered the blood stream?

DR RICHTER No, there was no evidence

DR WRIGHT Was the growth on the aortic valve of long standing or rather recent in development?

DR RICHTER I think comparatively recent, but I cannot place it within the three weeks

DR WRIGHT Was there evidence of old

scarring of the valve in addition to the recent involvement?

DR RICHTER No, I think that the lesion was a recent one and the underlying valve did not show any particular change

DR BRUGER William Osler was unusually interested in this disease and he frequently stressed in his writings that attacks of orthopnea and dyspnea may be among the earliest symptoms in acute endocarditis

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### Editorial Committee

J SCOTT BUTTERWORTH, M D

MAURICE R CHASSIN, M D

HERMAN O MOSENTHAL, M D, *Chairman*

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### MEDICINE NOT A BUSINESS

Most of the differences between laymen and the medical profession result from a lack of understanding, Dr Frank H Lahey, president-elect of the American Medical Association and director of the Lahey Clinic in Boston, told an audience of more than 800 persons in the memorial chapel of Union College on March 13, as reported in the *Schenectady Gazette*. Dr Lahey spoke under the auspices of the Steinmetz Memorial Foundation and his talk was the fourteenth in the series of annual lectures presented in honor of Charles Proteus Steinmetz.

Most laymen, Dr Lahey explained, take a business man's approach toward medicine. This he termed "a misunderstanding of motives." "Business," he said, "deals with commodities. Medicine is never a commodity and the doctor never thinks of himself as a commodity. Business deals with money and goods. Medicine deals with knowledge."

Because medicine is concerned with "qualitative competition," the medical profession is necessarily timid about new ideas that would change it radically, Dr Lahey said. Addressing himself to those persons who urge socialized, regimented medicine, Dr Lahey pointed out that "America stands highest in medicine, and that for many years, the tide has been toward America. Where they have had regimented,

socialized medicine the standard has been lower."

The American Medical Association and its members want to see "evolved changes," according to the speaker. "Medicine is cautious," he said, "maybe a little stiff-necked to see changes made patiently."

Using as an example the demand to have medical insurance, Dr Lahey explained that the association of doctors would approve of such a move providing it fulfilled three conditions. Such insurance, he said, would "first have to be under the commissioner of insurance so that it would be financially sound. Second, it should be limited by some top salary so that it would not be given where it was not needed. Third, and most important, there would have to be a free choice of doctors." Unless these three conditions were fulfilled, said the lecturer, this movement would be opposed. "You must," he added, "have a free choice of a doctor even if you choose a bad one."

Since the layman is dependent on medicine, Dr Lahey declared, it is necessary that the layman know the medical profession's point of view. In giving a résumé of the work done by the American Medical Association, to whose presidency he will be inducted in June, the lecturer termed it as "an attempt to organize medicine so that it will work."

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### ATTENTION P AND S

The annual A.M.A. dinner for alumni of the College of Physicians and Surgeons of Columbia University, will be held at the Hotel Statler, Cleveland, Ohio, on Wednesday, June 4, at 7 00 P.M. The local Committee on Arrangements is Dr Gerald H Shibley and Dr Valentine Jordan.

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### THY BROTHER'S KEEPER

Every malpractice action undermines the confidence of the public in all physicians, and it is said that a dozen new suits are commenced based upon the publicity of a new case. You are your brother's keeper in maintaining a justified public confidence. Let no improper act of yours lead to a betrayal of that trust—*Wisconsin Med J*

# *Abstracts of Proceedings* of the NEW YORK PATHOLOGICAL SOCIETY

*The NEW YORK STATE JOURNAL OF MEDICINE announces that under arrangement with Dr Francis Carter Wood there will appear in this Section abstracts of the proceedings of the regular meetings of the New York Pathological Society—EDITOR*

REGULAR MEETING, NOVEMBER 28 1940

MAURICE N RICHTER, *President*

D MURRAY ANGEVINE, *Secretary*

## Postpartum Necrosis of the Pituitary Gland Dr Alfred Plaut

Baffling discrepancies between clinical phenomena and anatomic findings mar our understanding of diseases connected with the pituitary gland. This becomes evident when one reads about Simmonds' disease, pituitary cachexia, anorexia nervosa, postpartum weight loss, etc. For one group of cases, at least, an anatomic and etiologic basis has been provided by Sheehan (Sheehan, H S. *J Pathol & Bact* 45: 189, 1937). According to Sheehan, Simmonds' disease, severe or mild, is caused in most instances by postpartum necrosis of the anterior lobe. The anterior lobe becomes necrotic when the patient goes into shock from severe hemorrhage. American literature on this subject is scant; the mechanism of the necrosis is not clear.

The following case is, therefore, presented.

A. S. (A-34-40). The patient was a 21-year-old primigravida, with normal findings on prenatal care. Three days before labor pains started, she became ill with a cold and remained in bed, from that time on she had a fever.

On admission the temperature was 104 F and the pulse 130, there was herpes labialis and a diffuse punctate, macular, partly scarlatiniform rash over the trunk and face. The throat was injected. The blood count and sternal puncture revealed acute stem-cell leukemia, the count showing a hemoglobin of 50 per cent, 2,520,000 red blood cells, with a leukocyte count around 1,000 and 80,000 platelets. The urine was normal. The blood culture contained large numbers of colonies of hemolytic streptococcus.

The patient delivered spontaneously. The infant was normal except for a rash similar to that of the mother. The infant developed normally later. During delivery the patient lost about 1,200 cc of blood and went into

profound shock. She died with hyperpyrexia two days later.

At autopsy (aside from the anatomic manifestations of leukemia) a deep cervical tear was found. The hypophysis appeared large in relation to the sella, the anterior lobe, near the base of the stalk, formed a round bulge. The cut surfaces of the anterior lobe suggested diffuse necrosis. They were homogeneous, light brownish yellow, and velvety, entirely devoid of detail, the hilar connective tissue could not be seen. Narrow zones under the capsule appeared reddish (see Fig 1).

The microscopic picture confirmed the gross diagnosis. Most of the tissue of the anterior lobe showed incomplete necrosis, with severe destruction of cell bodies and varying destruction of nuclei. Well-preserved anterior lobe tissue, partly with recognizable pregnancy change, was found near the intermediate region and under the capsule. Some of this tissue was separated from the necrotic area by a narrow zone of hyperemia and hemorrhage. The posterior lobe appeared normal and so were the epithelial cells it contained.

In all probability this patient, had she survived, would have become a victim of Simmonds' disease.

While we know that embolization is not the cause of pituitary necrosis, we still do not know what actually causes it. The lesion resembles infarction, in the neighborhood of the capsule and other adjoining structures the tissue may escape the necrotizing process, just as in a kidney infarct. But there is no embolic or thrombotic occlusion of a correspondingly large vessel, and the thromboses that sometimes are found probably are secondary to the necrosis. The sudden decrease in blood flow as caused by severe loss of blood and by shock, combined with the assumed vulnerability of the tissue of the anterior lobe



FIG 1 Gross picture of pituitary gland after formalin fixation. The cut surfaces of the anterior lobe are homogeneous and velvety. No detail is visible. The narrow black markings at the periphery and near the intermediate region correspond to preserved anterior lobe tissue.

in pregnant women seems to represent the causative mechanism. Postpartum necrosis has been observed after shock with only negligible hemorrhage (Sheehan, H. L., and Murdoch, R. *J. Obst. & Gynaec., Brit. Emp.* 45: 456-489, June, 1938—Case II, for instance). Thus, the blood loss cannot be the directly determining factor. The fact that pituitary necrosis does not occur in men, even after most severe hemorrhage and profound shock, points to the pituitary of the pregnant woman as a *locus minoris resistentiae*. The weakness might be inherent in the pregnancy change of the chief cells. It might be ascribed in part to the enlargement of the anterior lobe which is squeezed in the, now too narrow, sella. In one case (Gottschalk, H. C., and Tilden, J. L. *J. A. M. A.* 114: 33, 1940) part of the anterior lobe which protruded from the sella was spared. Such a finding speaks in favor of a mechanical factor.

Shock can cause necrosis in other organs (intestine and kidney). As the experiments of Penner and Bernheim (Penner, Abraham, and Bernheim, Alice Ida. *Arch. Path.* 30: 465, 1940) prove, kidney necrosis in shock is caused by vasospasm, and according to Moon "the arteries of animals in shock are in a state of maximal contraction." Little if anything is known about the reactivity of pituitary arterioles and arteries. Even the anatomic arrangement of the hypophyseal

blood supply is still under debate and, with it, the possibility of shunts.

Pending further investigations, I propose the working hypothesis that vasospasm, which is part of the shock syndrome, is an essential factor in bringing on postpartum necrosis of the anterior pituitary. A similar hint has been made by Giornelli (Giornelli, L. *Riv. ital. di ginec.* 14: 533, 1933).

## Discussion

DR JOSEPH VICTOR (by invitation). I should like to ask Dr. Plaut what basis there is for assuming that this is a postpartum change. Might not this change have occurred or started before delivery?

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DR ALFRED PLAUT. Such an extent of necrosis of the anterior lobe of the pituitary is not compatible with normal life. The patient was in good health until three days before admission when she contracted what she thought was a cold, it was perhaps the onset of her acute leukemia.

A large number of such lesions have been described postpartum and none antepartum. I do not see why we should assume just in this particular case that the causation should be different from other cases.

DR VICTOR. The reason I asked is because of some experimental data that were obtained a few years ago in studying the metabolism of the pituitary in different phases of reproduction. It was found that the metabolism of the pituitary at the time of parturition was about three times as high as in any other

phase of reproduction in the rat. These reproductive phases included postpartum changes, changes in the estrus cycle, and so on, so that there is some physiologic evidence that the anterior lobe of the pituitary is extraordinarily active before parturition, and it seems to me the reasons presented with regard to the postpartum part of this lesion might just as well be assumed for an antepartum origin, simply because the patient was well before parturition and died forty hours after.

DR PLAUT: Why should leukemia lead to necrosis of the pituitary? To my knowledge no pregnant woman who died of anything but shock and hemorrhage ever presented this picture.

In regard to the second point, in the dis-

cussion of Dr Angevine, I should like to ask how long after the severe shock did these patients die. One cannot expect the necrosis to develop in a few hours.

DR ANGEVINE: A good many lived for as long as two days.

DR PLAUT: That means that some might have lived for a few hours only. There are in the American literature 2 cases of this disease. Dr Stander, years ago while still in Baltimore, wrote a paper in which he mentioned 2 patients who died after hemorrhage and shock during delivery and who had pituitary necrosis, but nobody at that time paid much attention to this lesion.

In reply to Dr Richter's question, there were no thromboses that could explain the diffuse necrosis.

### An Experimental Study of Nutrition and Age as Factors in the Pathogenesis of Common Diseases of the Rat. Dr John A. Saxton, Jr. (by invitation)

A study was made of the most common spontaneous diseases in over 300 rats of the Yale strain used in two experiments by C. M. McCay dealing with the relation of diet to the average life span. The purpose was to determine the relation of these diseases to age and to diets altering the average life span. The study included rats killed at intervals during the experiments and those dying naturally.

In the first experiment the effects of protein level (35 per cent and 8 per cent), type of protein (liver and casein), and slight restriction of diet after middle age were studied. The average life span on a high casein, unrestricted diet was significantly shorter than on a low liver, slightly restricted diet. The second experiment dealt with the effects of retardation of growth by a greatly restricted but high quality diet, started immediately after weaning. This experiment had run 600 days at the time of the report, but similar previous experiments have shown that rats thus retarded in growth may have greatly extended life spans (McCay, C. M., *et al.* *J. Nutrition* 18 1, 1939).

The most common disease was a characteristic bronchopneumonia of obscure etiology leading to bronchial obstruction and bronchiectasis in affected lobes. This disease increased in frequency with age, from rare examples at 200 days to over 80 per cent at 600 days. The development of bronchial lymphoid tissue and changes in the distensibility of the lungs with age appeared to be factors favoring bronchial obstruction and bronchiectasis. The disease was not influenced by the

variables of the first experiment but was retarded both in age incidence and severity in rats retarded in growth.

The second most common disease was a degeneration of the kidneys characterized by albuminuria and progressive obstruction of the renal units by hyaline casts with subsequent fibrosis. There was an increasing frequency with age from 9 per cent at 300 days to 54 per cent in rats over 700 days old. In the first experiment the high casein, unrestricted diet, which shortened the average life span, favored development of the disease (100 per cent of 13 rats) as contrasted with a low liver, slightly restricted diet (26 per cent of 19 rats). The disease was not seen in rats retarded in growth up to 600 days but was present in several controls of corresponding age.

Malignant tumors of various types, most commonly lymphosarcomas arising within the lungs, showed an increase in incidence with age in the first experiment from 18 per cent at 500 days to 32 per cent in rats over 700 days old, with no relation to the variables of this experiment. In the second experiment no tumor was found in rats retarded in growth up to 600 days as contrasted with 18 examples in the controls of corresponding age. Chromophobic adenomas of the pituitary were common in control rats of over 450 days of age, but none was seen in the retarded rats up to 600 days.

Vascular lesions similar to human atherosclerosis were not seen in any animals examined.

It is concluded that there are several com-

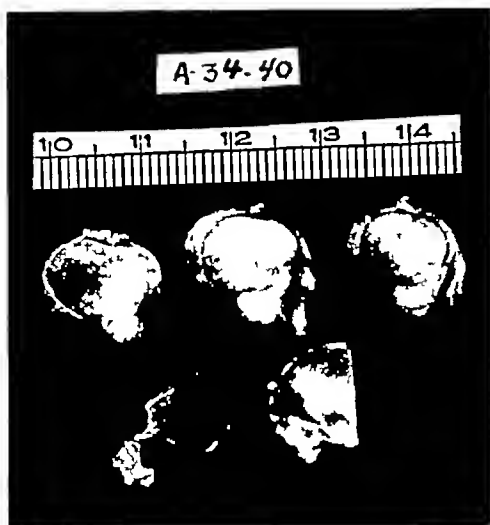


FIG 1 Gross picture of pituitary gland after formalin fixation. The cut surfaces of the anterior lobe are homogeneous and velvety. No detail is visible. The narrow black markings at the periphery and near the intermediate region correspond to preserved anterior lobe tissue.

in pregnant women seems to represent the causative mechanism. Postpartum necrosis has been observed after shock with only negligible hemorrhage (Sheehan, H L, and Murdoch, R. *J Obst & Gynaec, Brit Emp* 45: 456-489, June, 1938—Case II, for instance). Thus, the blood loss cannot be the directly determining factor. The fact that pituitary necrosis does not occur in men, even after most severe hemorrhage and profound shock, points to the pituitary of the pregnant woman as a *locus minoris resistentiae*. The weakness might be inherent in the pregnancy change of the chief cells. It might be ascribed in part to the enlargement of the anterior lobe which is squeezed in the, now too narrow, sella. In one case (Gottschalk, H C, and Tilden, J L. *J A M A* 114: 33, 1940) part of the anterior lobe which protruded from the sella was spared. Such a finding speaks in favor of a mechanical factor.

Shock can cause necrosis in other organs (intestine and kidney). As the experiments of Penner and Bernheim (Penner, Abraham, and Bernheim, Alice Ida. *Arch Path* 30: 465, 1940) prove, kidney necrosis in shock is caused by vasospasm, and according to Moon "the arteries of animals in shock are in a state of maximal contraction." Little if anything is known about the reactivity of pituitary arterioles and arteries. Even the anatomic arrangement of the hypophyseal

blood supply is still under debate and, with it, the possibility of shunts.

Pending further investigations, I propose the working hypothesis that vasospasm, which is part of the shock syndrome, is an essential factor in bringing on postpartum necrosis of the anterior pituitary. A similar hint has been made by Giornelli (Giornelli, L. *Riv ital di gynec* 14: 533, 1933).

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of view of its application to diagnosis and prognosis and from the point of view of its application to therapy. No fundamental change has occurred in the relationship of bacteriologic information to the diagnosis and prognosis of pneumonia. Observations in the Department of Health's Pneumonia Control Division stations indicate that changes in the results of bacteriologic examinations that can be ascribed to sulfonamide therapy are generally small and become significant only in cases receiving large amounts of drug.

When the results of the examination of specimens from patients receiving 10 Gm. or more of sulfapyridine or sulfathiazole are considered, the recovery of pneumococci from sputum specimens appears to be less than the 1939 average of 68 per cent. In 44 specimens obtained from such patients, only 2 showed pneumococci on Neufeld examination, and 19 showed pneumococci on mouse inoculation or blood agar plate examination—a total of 21 positive results, or 48 per cent, of the specimens examined. *Pneumococcus* classification has been extended to include 24 more pneumococcus strains and their interrelationships recognized by Kauffman, *et al.*, and Walter, *et al.*, which, together with the 31 now in use, make a total of 55.

Important changes have occurred in regard to the relationship of bacteriologic examinations to therapy. Such changes do not now make it possible to omit bacteriologic examinations entirely, however, and, in fact, the best medical practice continues to include prompt and early determination of pneumococcus types and other microorganisms, such as beta hemolytic streptococci, Friedländer bacilli, and staphylococci. The place of serum therapy among the other curative agents relies primarily on the judgment of the prac-

ticing physician as to the need for an additional therapeutic agent, to be employed when chemotherapy is not available because of toxic actions or when it is not effective. Since such need may develop during the course of treatment of any patient, a bacteriologic examination to indicate the kind of serum to be used is advisable early in the course of the disease or at an emergency at the time the need is recognized.

The recognition of bacteria that are resistant to the action of sulfonamide drugs may become a useful indication for the use of type specific antipneumococcus serum, and methods are now in use that may aid in making this a practical reality. Three strains that are resistant to 5 mg. per hundred cubic centimeter concentration of sulfapyridine in solid media have been isolated from 3 different patients.

In each case resistance to the bacteriostatic action of sulfapyridine was correlated with an unsatisfactory response of the patient to sulfapyridine therapy. Such sulfapyridine-resistant microorganisms remain susceptible to the action of type-specific antipneumococcus serum. Although resistance to the bacteriostasis of sulfonamide drugs is not at present a frequent observation among pneumonia patients coming to the attention of the Pneumonia Control Division, it should be suspected when favorable therapeutic results are not obtained, and appropriate bacteriologic examinations should be carried out.

In 1938 over 6,000 specimens from pneumonia patients were examined by the Department of Health, in 1939 over 9,000, and in 1940 6,452. Many physicians find bacteriologic examinations for pneumonia patients of value while using chemotherapy as the preferred therapeutic agent in every pneumonia case.

#### "DEARTH" OF COUNTRY DOCTORS

"At present there is much agitation about the dearth of rural physicians. This need is much exaggerated. Our survey of this state does not show any great shortage of rural physicians. There are some isolated, sparsely populated areas in the northern part of the state in which physicians are widely separated. The few people who reside in these areas must expect to travel some distance for medical care. Even with government subsidy it would not be feasible to establish first-class medical care close to these people. Our investigation has shown that it is not so much lack of medical care in these districts as it is indifference or lack of education on

the part of certain groups. Physicians within reach have never refused to go many miles to see these patients or give them adequate care, even with no prospects of financial return. The State Medical Association not long ago requested, through the newspapers throughout the state, information regarding those who had been unable to obtain adequate medical care. About 200 replies were received. These replies showed definitely that these people could not be satisfied or that they did not know how to avail themselves of the medical care provided for them."

—J. M. Hayes, M.D., Minneapolis

mon spontaneous diseases of rats which increase in incidence with age, sufficiently to become limiting factors in the average life span. Diets may affect the average life span through their influence upon certain of these diseases. Retardation of growth by drastic restriction of diet retards the development of common spontaneous diseases along with body size, suggesting that adult structure and function play a role in the development of these diseases.

## Discussion

DR PAUL KLEMPERER: Sproul and Wilens described periarteritis in a certain percentage of aged rats, while Dr Saxton mentioned only medial changes and calcification. Does this mean that you never found those changes described by Sproul and Wilens? Is this breed of rats considered representative for all other strains, or is it possible that the strain that Sproul and Wilens were working with was different?

DR RICHTER: Wilens and Sproul (Wilens and Sproul *Am J Path* 14: 177, 201, 1938) worked with rats in Sherman's laboratory. The influence of diet in the strain had been previously reported by Sherman and Campbell (Sherman, H. C., and Campbell, H. L. *J Nutrition* 2: 415, 1930).

DR PLAUT: Do these two main lesions, those of the kidney and lung, occur in rats other than laboratory strains?

DR VICTOR: Have you observed cirrhosis of the liver in any of these rats?

DR J. MURRAY STEELE: I was not quite clear as to whether the renal lesion was less affected by retardation of growth than the lung lesion, if that is true, that seems to be an interesting difference between them. I should like to hear more about that.

DR JOHN A. SAXTON, JR.: We have seen a few examples of the periarteritis described by Wilens and Sproul, but I did not include it in the report because it has not been seen frequently enough to be a factor in determining the average life span. We have found with that condition a rather severe vascular nephritis and had the opportunity to study one animal during life. The phenolsulphone-

phthalein excretion was 5 per cent and the blood urea nitrogen was elevated. It died apparently in uremia.

Concerning breed differences, I do not think that the diseases described are necessarily peculiar to the Yale strain, but since there are known differences in length of life in different breeds, differences in incidence might be expected. The laboratory conditions may also be a factor. So far as I know there has not been sufficient study on the length of life in relation to spontaneous changes to make possible a statement on incidence in other breeds.

The kidney and lung diseases are present in practically all strains of rats maintained in laboratories. The lung disease has been found in wild rats, although there are no available statistics on frequency. I have seen no reference to the kidney disease in wild rats.

I have seen only one example of spontaneous cirrhosis of the liver. It is apparently rare in the strains that I have examined.

In regard to the relation of retardation to the development of this renal disease, we have not seen examples of it in the retarded animals, but several cases have appeared in the controls. Routine urinalyses have shown that the retarded rats have not been excreting albumin, whereas many of the controls, particularly those receiving a protein supplement, have had albumin in the urine. Thus far the renal lesion appears to have been more affected by retardation than the lung lesion.

DR VICTOR: Have you any evidence of renal disease resulting in death—the human nephrosis with edema?

DR SAXTON: Of the animals studied during life which have subsequently been shown to have the renal disease, none has had an elevated blood urea nitrogen. The evidence that the renal disease may result in death is based upon the microscopic picture of extensive renal damage.

DR KLEMPERER: Is there any relation between cardiac hypertrophy and renal disease?

DR SAXTON, JR.: We have usually found a slightly enlarged heart in rats showing an advanced stage of this renal disease.

## Relationship of Bacteriologic Procedures to the Diagnosis and Therapy of Pneumonia

Dr. Wheelan D. Sutliff, Assistant Director (Pneumonia) Bureau of Laboratories, New York City Department of Health

As chemotherapy with sulfonamide drugs is now the therapy of choice for the treatment of pneumococcus and beta hemolytic strepto-

coccus pneumonia, the relationship of bacteriologic procedures to the care of pneumonia patients must be re-examined from the point

of Medicine, Medical Society of the County of Queens, Utica Academy of Medicine, National Health Library, Westchester Free Medical Library, Schenectady Medical Library Association

The state libraries are New York State Library, Medical Library, Psychiatric Institute, Hudson River State Hospital, Poughkeepsie, Craig Colony, Sonvea, Institute for Malignant Diseases, Buffalo

The city and county libraries are Grosvenor Library, Buffalo, Municipal Reference Library, Public Health Division, New York City, Bureau of Laboratories, New York City, Edward J Meyer Memorial Hospital, Buffalo, Bellevue Hospital, Laboratories of Pathology, Bellevue School of Nursing, New York City, and Grasslands Hospital, Valhalla

Foundation libraries are Rockefeller Institute for Medical Research, Lawrason Brown Library, Trudeau, Saranac Laboratory, and Mary I Bassett Hospital, Coopers-town

Medical school libraries are Columbia University Medical School (P & S), University of Rochester Medical School, University of Buffalo Medical School, New York University, College of Medicine, Cornell University Medical School, Syracuse University Medical School, New York Post-Graduate Medical School, Long Island College of Medicine, and Prentiss Library, New York Medical College

Memorial libraries are William Ropes May Library, New York City, and Charles S Wilson Library, Johnson City

Sanitarium and infirmary libraries are Clifton Springs Sanitarium, Metropolitan Life Insurance Hospital, Mt McGregor, and New York Eye and Ear Infirmary

The hospital libraries are Montefiore Hospital, New York City, Mount Sinai Hospital, New York City, New York Hospital, Westchester Division, White Plains, John M Wheeler, Presbyterian Hospital, Hospital for Ruptured and Crippled, New York City, St Vincent's Hospital, New York City, Lenox Hill Hospital, New York City, Lebanon Hospital, Bronx, Metropolitan Hospital, Welfare Island, and New York Orthopedic Dispensary

This classification is arbitrarily arranged according to questionnaires. Therefore, the selection may not be as the staffs of the library would have chosen

According to Dr Lawrence's comprehensive report,<sup>3</sup> there are 316 general and 305

miscellaneous hospitals in the state. Most of them were omitted in this survey because their libraries are not included in the A M A Directory

The oldest libraries are not necessarily the largest libraries. It is difficult to determine the exact age of libraries, as usually they had their beginning in a gift of old books, with other gifts added gradually. The New York Hospital Library in White Plains is among these old institutions, having been established in 1821. The Medical Society of the County of Kings was organized in 1844, The New York Academy of Medicine, in 1847, the Clifton Springs Sanitarium, in 1850, the Hudson River State Hospital in Poughkeepsie, in 1871, and the Syracuse University Library, in 1872

One of the most interesting facts shown in this survey concerns the use of books and journals in each library. Use depends not only upon the number of readers making use of its facility but also upon the type of material on the shelves. Some of the larger libraries are depositories for medical literature, old and modern, good and poor, and for that reason there will be much material that has infrequent use. Again, some of the smaller libraries clear out old medical books and journals regularly and, therefore, volumes on their shelves are more frequently read. These factors may have affected to some degree the figures shown in Table 2

Use of the 2 larger libraries in Buffalo is notable when compared with the number of volumes in these institutions. The Grosvenor Library is a city-supported general library with an annual circulation of 240,000 volumes, circulating 33,125 volumes or 14 per cent of the whole. Total attendance is 180,000, 11 per cent being in the medical department. The University of Buffalo Medical Library has 28,855 volumes, with an annual circulation of 41,875 volumes and 35,000 readers. This heavy use of books seems to be true of a few other libraries according to the survey, but in these libraries there is extensive use of unbound material not accounted as volumes

The survey also indicates the number of employees in each library. The number naturally depends both upon size of the library and upon use of the volumes. This fact is indicated in Table 3

While the work load seems to be from 1,000 to 10,000 volumes per employee, with an average of 4,000, it must be remembered that the librarian in a medical society library has many additional duties besides those of caring

## Special Article

### MEDICAL LIBRARIES IN THE STATE OF NEW YORK

FLORENCE A COOKSLEY, M A , Rochester, New York

A SURVEY of medical library facilities in the State of New York was undertaken to determine (1) what is offered in medical literature to the physicians in the large cities and in smaller communities, (2) where these medical libraries are situated, and (3) what provision is made for the practitioner located at some distance from a medical library. A questionnaire was sent to all medical libraries of the state listed in the *Directory of the American Medical Association* and a few others not included in that list but which are members of the American Library Association. Fifty-two questionnaires were sent out and forty-eight were returned. Except for the Albany Medical School Library, those failing to make returns were among the smaller libraries.

The oldest libraries, it was found, are those attached, first, to medical societies and, second, to medical schools. There are many small hospital libraries, recently developed since the recommendations of the American Medical Association<sup>1</sup> regarding the adequate hospital library. The Association defined what it considers essential in a hospital undertaking an educational function and states that minimum needs are "a useful selection of late editions of standard text and reference books and current files of not less than ten of the better medical journals."

Many hospitals gradually acquire a considerable library through gifts of books from retired physicians or from their estates after their death. Many physicians "clean house" by dumping old textbooks into a medical library and it is a good practice as long as the collection is augmented by modern books and journals. The recommendations of the A M A led many hospitals to weed out much of their accumulation of old books and to fill the emptied shelves with recent works and, instead of depending upon physicians to bring in their dog-eared journals, have subscribed to one or two publications in each field of medical practice. Full-time or part-time librarians have been employed in these hospitals, or the record librarians have taken over the care of the library.

In New York State a special effort has been made to meet these requirements of the A M A and, although hospital libraries are planned for the use of interns and residents, members of the staffs find the book shelves convenient while visiting the hospitals. It is because of the growth of hospital libraries that the number of medical libraries in the state seems extensive.

Medical libraries may be grouped in two ways: first, according to size, that is, number of volumes, and, second, according to type—whether they are medical school libraries, medical society libraries, state libraries, hospital libraries, or those established by foundations or by sanitariums.

There are 8 large medical libraries<sup>2</sup> in the United States, all having 100,000 volumes or more and 3 of the 8 are situated in New York City. These libraries according to size are: Surgeon General's Library, Washington, D C, 409,250; The New York Academy of Medicine, New York City, 232,000; Boston Medical Library, Boston, 180,600; College of Physicians and Surgeons, Philadelphia, 176,000; Medical Society of the County of Kings, Brooklyn, 147,000; Wm H Welch Library, The Johns Hopkins Hospital, Baltimore, 129,700; John Crerar Library, Chicago, 108,550; and Columbia University Medical School New York City, 100,000.

It is interesting to note that outside of the national library the largest libraries have been established by medical societies, not by medical schools.

The medical libraries of New York State, arranged according to size, are shown in Table 1.

Classified according to type of library, these medical libraries are of several kinds, 8 are medical society libraries, 5 are state libraries, 7 are city- or county-supported libraries, 4 are supported by foundations, 9 are medical school libraries, 2 are memorial libraries, and 3 may be classified as sanitarium libraries. The remainder may be grouped as hospital libraries.

The medical society libraries are: The New York Academy of Medicine, Medical Society of the County of Kings, Rochester Academy

<sup>1</sup>Librarian, Rochester Academy of Medicine

TABLE 1  
[Continued]

Library	Estab- lished	Size in Volum <sup>e</sup>	Subscriptions For- eign	Yols Used Annually	Annual Users	Free References Service for	Lending Privilege	Support of Library
40 N Y Orthopedic Dispensary & Hosp. Acad Med	1927	1,850	1	18	400	Members, few others	Doctors only	Gifts
41 Utica Acad Med	1926	1,700	5	31	200	Members few others	Members	Members
42 N Y Eye & Ear Infirmary	1896	1,700	6	6	50	None	Doctors only	Gifts
43 Hudson River State Hosp., Poughkeepsie	1871	1,400	0	23	250	None	Doctors only	State
44 Chas B Wilson Hosp., Johnson City	1935	1,217	1	50	350	Members	Doctors only	Gifts hospital
45 Grasslands Hosp., Valhalla	1914	1,200	0	51	420	Few for members	Doctors n few others	County gifts
46 Hospital, Ruptured & Crippled, N Y C	1935	1,142	7	27	2,700	Members	Members	Endowment
47 Wretches Free Med Lib., N Y C	1934	1,090	0	30	150	Any doctor	None	Members
48 Lebanon Hosp., Bronx	1893	850	3	20	500	None	Members	Endowment
49 Schenectady Med Lib Assoc	1917	700	1	23			Doctors only	Members

\* Loans only

TABLE 2—LIBRARIES WITH LARGE CIRCULATION

Library	Size of Vols	Vols Used Annually	No of Users
N Y Acad Med	236 000	182 000	64 360
Kings Co Med Soc.	149,950	77,260	14,700
Columbia Med Lib	100,000	134,950	82,740
Univ Buffalo Med School	28 850	41 875	35 000
Grosvenor Lib	24,000	33 125	20 500
National Health Lib	6,512*	30 000	1,500
Bellevue School Lib	5,000	26,000†	54 000
Edw J Meyer Hosp.	4,600†	9 400	15 500

\* 33 000 pamphlets not included

† Only borrowed volumes counted

‡ Nurses use library for study hall 44 cases of journals unbound and not included in above count

TABLE 3—EMPLOYEES IN MEDICAL LIBRARIES

Library	Size	Annual Use	Users	Em- ployees
N Y Acad Med	236 000	182 000	64,360	34
Kings Co Med. Soc.	140 950	77,260	14 700	7 1/2*
Univ of Buffalo	28,850	41,875	35 000	4 1/2
Grosvenor Lib	24,000	33 125	20 427	2†

\* A part-time worker is counted as 1/2 in this survey for convenience

† Student help additional.

for a library, including correspondence for the society, bookkeeping, mailing meeting notices, attendance at meetings, and extensive telephone service. In medical libraries that are divisions of larger libraries, there is little, if any, cataloging, purchasing, bookkeeping, or correspondence. These factors must be remembered when considering the work load of a medical librarian.

Medical librarians in New York State, as in other states, tend to retain their offices for long terms, largely due, perhaps, to their extensive acquaintance with the material in the libraries and the lack of time on the part of the physician to search for the desired literature. No doctor has time to wade through the maze of medical literature printed today.

Six librarians in New York State have served for twenty years or more, 5 for fifteen years, 11 for ten to fourteen years, 7 for five to eight years, and 18 for five years or less, 3 did not state their years of service. Charles Frankenger of the Kings County Medical Library has served that organization for twenty-three years, earlier he was librarian for the Jefferson Medical College and before that time was on the staff of the College of Physicians of Philadelphia, receiving there his basic training from the well-known librarian, Charles Perry Fisher. Since 1926 Mr Frankenger has served as consulting librarian and special lecturer at the Long Island College of Medicine, the first medical school in the country to institute a course on medical literature and bibliography as a required course in its curriculum.

[Copies of the above table may be obtained upon request.—Editor]

TABLE 1.—MEDICAL LIBRARIES IN NEW YORK STATE, ARRANGED ACCORDING TO SIZE

Library	Estab- lished	Size in Vol- umes	Subscriptions For- eign	Do- mestic	Vol- Used Annually	Annual Users	Free Reference Service for	Lending Privilege	Support of Library
							Brief anyone	Members only	Members endowment Members endowment gifts
1 N Y Acad Med	1847	236,000	1490	830	182,000	64,360	None	Members only	Members endowment Members endowment gifts
2 Kings Co Med Soc	1844	149,950	836	730	76,260	14,700	None	Members only	Members endowment Members endowment gifts
3 Coll Phys & Surg, Columbia Univ	1900	100,000	533	510	134,950	82,740	Members only	Members only	Medical school
4 N Y State Med Lib	1891	48,000	175	216	10,000*		Members only	Members only	State
5 Univ Rochester Med School	1924	45,425	300	158	10,889*		Members	Members only	Medical school
6 Rockefeller Inst Med Res	1904	30,200	700		6,500		Members brief for others	Members only	Endowment
7 Univ of Buffalo Med School	1895	28,850	83	150	41,875	35,000	Members only	Members only	Medical school
8 N Y Univ Coll Med	1914	25,000	99	245	18,000		Doctors only	Any doctor	Medical school
9 Cornell Univ Coll Med	1898	25,000	170	85	10,000*	29,500	None	Members	Medical school
10 Grosvenor Lib, Med Dept, Buffalo	1859	24,000	2	94	33,000	20,500	Anyone	None	City
11 Syracuse Univ Coll Med	1872	19,150	61	322	9,000	300	Members	Doctors only	Members, medical school
12 Rochester Acad Med	1900	17,000	10	87	6,000	2,500	Anyone	Doctors only	Members, endowment, gifts
13 N Y Post Graduate Med School	1925	15,070	60	161	6,375*	14,000	Members a few others	Anyone	Gifts, medical school
14 Med Soc, County of Queens	1934	14,550	12	128	2,500	2,000	Any doctor	Doctors only	Members gifts
15 Long Island Coll Med	1887	13,800	30	197	5,635	9,375	Members only	Members	Medical school
16 Psychiatric Inst & Hosp, N Y C	1896	13,716	62	88	18,050	4,160	Brief for members	Doctors only	State
17 Montefiore Hosp Chronic Dis, N Y C	1914	10,349	75	81	11,500		None	Members	Hospital
18 Prentiss Lib, N Y Med Coll	1886	11,000		200			Members	Members	Gifts, medical school
19 Bellevue Hosp Pathologic Labs	1911	9,400	36	37			None	Doctors only	City
20 Mount Sinai Hosp, N Y C	1852	8,890	18	52		11,000	None	Members	Endowment gifts
21 Mary I Bassett Hosp, Cooperstown	1927	8,000	21	94			Doctors only	Doctors only	Endowment, gifts
22 Clifton Springs Sanitarium	1850	7,825	5	52	600		Members only	Members	Hospital
23 National Health Lib, N Y C	1931	6,512	75	425	30,000	15,000	Members only	Members	Members gifts
24 Lawson Brown Memorial Lib	1901	6,100	14	27	4,000		Anyone	Doctors only	Endowment
25 Medical Reference Lib, Pub Health Div, N Y C	1916	6,000	6	74	10,500	14,063		City, State, Federal employees	City
26 Craig Colony, Sonoma	1896	6,000	4	15	240	10	Members	Members	State
27 Burdette Lib, N Y C	1900	5,425	18	42	900	12		Members	City
28 Bellevue School of Nursing, N Y C	1935	5,000		80	20,000	53,850	Members a few others	Members, a few others	City
29 Albany Med Coll	No reply								
30 N Y Hosp, Westchester Div, White Plains	1821	5,400	5	30			Any doctor, a few public	Doctors only	Hospital
31 State Inst, Study of Malignancy, Buffalo	1898	4,480	9	31	1,500	70	Members only	Members	State
32 Ldw J Meyer Memorial Hosp	1921	4,610	15	102	9,400	15,500	Anyone	Anyone	City endowment
33 St Vincent's Hosp, N Y C	1934	4,200	3	87	2,000		Members only	Doctors only	Hospital
34 Lenox Hill Hosp, N Y C	1925	4,000	6	85	3,600		Members only	Doctors only	Members only
35 Saranac Lab, Saranac Lake	1893	4,000	19	25	60		Brief for members	Members	Hospital
36 Inst. Ophthalmology, Presbyterian Hosp, N Y C	1933	3,500	39	48	2,638	1,900		Members	Hospital
37 Metropolitan Life Ins Sanitarium, Mt. McGregor	1913	2,870	12	41			Members	Members	Insurance Co
38 Metropolitan Hosp, Welfare	1900	2,565	1	49	6,000	5,000	Members	Members	City
39 Wm R. May Memorial, Willard Parker Hosp, N Y C	1936	2,055	1	32	3,570	4,800	Members	Members	City endowment

Differing from other medical libraries in most respects, the National Health Library in New York City must be considered separately. Supported by the National Health Council, it is a department of the Division of Laboratories and Research of the New York State Department of Health. It is maintained for the staff of the central laboratory in Albany and the branch laboratory in New York City. Laboratories of New York State approved for bacterial and pathologic examinations, 127 in number, consult this library. The library is for reference and research, and material is not lent outside the library except tissue slides. A current literature index is maintained with the *Library Index* published weekly, also, abstracts of important articles are prepared for users of the library.

From this survey, what can be said regarding the communities where medical libraries are few and sometimes inadequate? What are the opportunities for physicians in these areas to obtain medical literature? Where may they borrow books? Where may they have bibliographies prepared?

Some of the larger libraries refuse to lend to any but their own members, although nonmembers may use the books in the library, other libraries will lend books but will not prepare bibliographies without charge. Only 3 libraries provide package libraries—the University of Buffalo, the Municipal Reference Library in New York City, and Grasslands Hospital. A package library is a collection of reprints and clippings ready to send out upon request for material upon a given topic. Only 1 of these 3 libraries, the University of Buffalo, will lend to physicians not on the staff. The Albany Medical Library, being a State institution, cheerfully serves the physicians of the entire state, except those in New York City where ample facilities are at hand. Bibliographies are prepared and desired information is promptly sent out, the borrower paying mailing charges. Photostats and abstracts are prepared for a small charge. The extent of the service of this library cannot be measured since no account is kept of users, but medical men from all parts of the state make frequent use of its facilities.

Only 2 libraries—the Rochester Academy of Medicine and the Edward J. Meyer Memorial Hospital in Buffalo—stated that bibliographic service is offered to medical and nonmedical readers. The privilege of borrowing is not limited, but these libraries have few calls from outside their own communities.

The large libraries provide little bibliographic service, although they help readers to find material for themselves. Libraries of medium size provide a varying amount of such service for their members and a few give limited service to doctors outside. Small libraries are limited in scope because few journals are available.

Although refusing to lend their volumes to nonmembers, large libraries and some of the smaller ones are generous in lending to other libraries, so that libraries with limited budgets need expend their money only for the books and journals most in demand. The New York Academy of Medicine last year made 3,040 interlibrary loans, the New York State Medical Library made extensive loans but kept no account of numbers, other libraries giving considerable service were the University of Rochester, the University of Buffalo, Cornell Medical Library, New York Post-Graduate Library, and the Bassett Hospital Library in Cooperstown.

The advantage to the physician in these interlibrary loans is that, while he cannot borrow books directly from a library, he may read them in a nearby library that borrows from a larger library. The borrower pays cost of mailing.

If, however, the physician lives at a distance from a library so that interlibrary loans are impossible, he may obtain his desired material in a number of ways. First, if he is a subscriber to a loose-leaf system of medicine or surgery, the publisher will furnish him reference material, including abstracts, translations, and photostats, without charge. In requesting this service the physician should explain in detail what information he seeks and also list the material he has at hand. A limited amount of reference material will be received but it is usually a good selection.

Second, he may borrow any journal not more than two or three years old from the *Journal of the American Medical Association* if he sends 6 cents postage for each journal. Bibliographies are not prepared but considerable information may be obtained from this source. Also, a package library will be sent upon request. This is a satisfactory source for obtaining information regarding other physicians, medical laws, and medical organizations.

Third, and most satisfactory, is to write to the New York State Medical Library at Albany, whose splendid service has already been described. Fourth, the physician may write to a small library in his vicinity asking

TABLE 4

County	Physicians	Hospitals	Libraries
Albany	361	13	2
Broome	239	10	1
*Dutchess	215	11	1
Erie	1,178	4	17
Monroe	652	23	10
*Nassau	524	12	0
Oneida	280	10	1
Onondago	464	17	1
*Suffolk	307	22	0
*Westchester	998	36	2
Greater New York	15 080	125	27

\* Vicinity of Greater New York City

Another librarian with a long service record is Mrs Josephine Nichols of the Cornell University Medical School in New York City, having held her position as librarian for the past twenty years. Previous to that appointment she published a number of genealogies and did other research work in libraries. She prepared for her present position at Teachers College.

Twenty-four years of service are credited to Miss Sara L Halliday of the Library of the Department of Health in the City of New York. Her earlier efforts were in the South Orange, New Jersey, Library and in the Lederle Laboratories. Her library serves the Department of Hospitals, as well as the Department of Health, and her work includes preparation of a weekly sheet called "Have You Read," directing attention to the latest articles on public health. In addition, Miss Halliday prepares the December issue of *Notes*, a pamphlet published by the Municipal Reference Library in New York City, in which are listed all new accessories for the year.

Dr L A Damon has been librarian at Craig Colony for a period of twenty years. Miss Alice T Thayer, daughter of a physician who was formerly on the staff of the Clifton Springs Sanitarium, has served in the library for twenty-one years. Sixteen years of service has been given by Mrs Edith L M Keller at the New York Post-Graduate Medical School and by Miss Louise S Houghton at the Schenectady Medical Library.

Mrs Myra D Fredericks at the Grosvenor Library in Buffalo, Dr Archibald Mallock at The New York Academy of Medicine, and Miss Mabel E Parson at the Bureau of Laboratories Library in New York City have all served for fifteen years.

An important finding in the survey was the location of the medical libraries throughout the state. It is to be expected that the largest cities will have the greatest number of libraries, the largest in size, and also the greatest number of hospital libraries. Wherever there is

a medical school a library of considerable size will be found. In the Greater New York area are the great and small libraries of the state, 28 in number, more than half of the number considered in this survey. In Buffalo are 4 libraries, 2 in Rochester, 2 in close proximity in Saranac and Trudeau, and 2 in Westchester County. The remaining 10 are scattered through ten counties (Table 4).

Forty-seven counties of the state have no libraries except those with less than 500 volumes, which are provided by local hospitals. The twenty counties having libraries included in this survey are Albany, Broome, Dutchess, Erie, Essex, Franklin, Livingston, Monroe, Oneida, Onondago, Ontario, Otsego, Saratoga, Schenectady, Westchester, Bronx, New York, Kings, Queens, and Richmond. According to Dr Lawrence, only one county—Hamilton—has no hospital, but most of the residents are within an hour's drive of a good one.

The next consideration is the annual subscriptions in the various libraries. It is of interest to note that the largest libraries annually receive more foreign journals than domestic. These depository libraries endeavor to take the best of all journals published in foreign lands. In The New York Academy of Medicine, 1,490 foreign and 830 domestic journals are received annually, a remarkable total of 2,320 medical journals. Other large libraries include the Kings County Medical Library with 836 foreign and 730 domestic journals, Columbia with 533 foreign and 510 domestic, and the University of Rochester with 300 foreign and 216 domestic. With the exception of Cornell University, which received 170 foreign and 85 domestic journals, all other libraries of the state receive annually more American journals than foreign.

In comparing amounts spent for books, journals, and binding, it was found that except in one instance considerably more was expended for journals than for books or for binding. The exception is New York Post-Graduate Library which allowed \$1,640 for journals and \$2,060 for books. The cost of binding in most instances equals or exceeds that of books. There are exceptions where the library does not make a practice of binding its journals or else the cost of binding is paid from funds outside the library budget. During depression years many libraries deferred binding the less-used journals and are now gradually working them through the annual lot, a fact that explains, in some instances, the present high cost of binding.

# Maternal Welfare

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### Case Report

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become pregnant, therapeutic interruption should be considered. Certainly, if decompensation takes place early in pregnancy, interruption is indicated, the interruption should not be done, however, until the patient has regained compensation. On the other hand, if a patient decompensates for the first time during the latter months of pregnancy, she is probably best handled by re-establishing compensation and carrying on to term with the patient at complete bed rest.

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the help of the librarian and, unless the library has definite rules against giving such assistance, the librarian will usually give the desired help

If the doctor is willing to pay the required fees, he may obtain bibliographies, abstracts, and photostats or translations from any of the large libraries

No physician can hope to read all or even a large percentage of the medical literature published annually, not even the 830 domestic journals received each year at The New York Academy of Medicine. Yet he can keep informed within his particular field by borrowing the best journals from nearby sources. Many physicians subscribe to the *Journal of the American Medical Association*, the *New York State Journal of Medicine*, and two to ten other journals, ten being more than the average, but often the periodicals in his own office prove inadequate and he must seek further information. With all the facilities offered to him, the New York State physician need not lack whatever medical literature he requires

In small communities having no medical libraries, physicians should encourage and assist nearby hospitals to build up their libraries to meet the requirements of the American Medical Association.<sup>1</sup> If sufficient funds cannot be obtained, it is suggested that the hospital expend \$15 annually to become a member of the Medical Library Association and receive books and journals through its Exchange. Libraries receive much duplicate material that is gladly given to other libraries

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### THE CULTS

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livered by forceps extraction. No general anesthesia should be administered. Local anesthesia may be employed, or the patient may be delivered without any anesthetic. One thing is certain: the addition of a difficult operative delivery to the burden of the already decompensated patient must end, many times, in an immediate fatality.

Many questions arise concerning pregnancy and heart disease. What advice should be given to a cardiac patient as to advisability of pregnancy? What should be done with the cardiac patient who sees the physician early in pregnancy and wants to know whether or not the pregnancy should be terminated? What should be done with the cardiac patient who has never decompensated before but does break down about the fifth month of pregnancy? What about the primiparous cardiac patient who becomes fully dilated with a posterior position? Should she

be rotated artificially or be allowed to rotate spontaneously?

These are a few of the questions, and certainly no article or series of articles is going to give satisfactory answers. It is our purpose to point out that cardiac disease in pregnancy is always a potentially serious complication. No one knows all the answers. It does seem to make sense, however, to point out that every known or suspected cardiac patient who becomes pregnant is entitled to the combined opinion of her attending physician, a competent cardiologist, and an experienced obstetrician.

#### Committee

CHARLES A. GORDON, M D, *Chairman*  
JAMES A. QUIGLEY, M D  
FERDINAND J. SCHOENECK, M D

#### WHAT THE PEOPLE SAY

Public opinion was sounded out on some interesting points in the recent survey of the care of the sick in Rochester. As noted in the *J A M A*, one of the questions was to determine the attitude of the public toward medical insurance.

While a decided majority expressed themselves in favor of some type of medical insurance, it was found when these replies were broken down by income classes that few of those in favor of it could afford such insurance and that the "theoretical potential market" for such insurance was only about 17 per cent of the total population. Ninety-five per cent of the public gave a negative answer to the question "Has your family ever had any kind of difficulty in securing it when they needed medical, hospital, or nursing care?" Ninety-two per cent stated that they did not know of any family in Rochester that needed such care and was unable to get it.

It may be significant of the confused character of the propaganda for "socialized medicine" that 43 per cent when asked "What, in your opinion, does the term 'socialized medicine' mean?" replied "Don't know" and that the rest gave replies that showed that they had little idea of the meaning of such a term.

That the "family doctor" has not disappeared may be suggested by the fact that 80 per cent stated that when they wished to call a doctor they would "usually go to the same doctor" and that 95 per cent of them preferred an M D to any other type of practitioner.

#### MEDICAL PROFESSION'S WEAK SPOT

American medicine, as an authority recently observed, has a weak spot, remarks the *Lapeer County Press*, Lapeer, Michigan. It is not a weakness affecting the patient—the sick man or woman anxiously seeking a return to health. Curiously enough, this weakness has helped the patient—for the weakness lies in the fact that the medical profession has been so busy fighting disease in experimental laboratories as well as at the bedsides of the ill that it has found little time to tell the public of its tremendous achievements.

The undeniable record is there for all who wish to read it. And it tells, through the figures, a dramatic and inspirational story of an endless battle against disease and suffering and death.

That battle has won victory after victory. In the period of a century and a half in this country, the life expectancy of man has nearly doubled from thirty-five to sixty-two years. During that time, typhus, one of the greatest killers, has all but disappeared. Smallpox and diphtheria, dreaded specters not so long ago, have been robbed of their terrors. Other great scourges—typhoid, diabetes, tuberculosis—have been brought under control and their mortality rates steadily reduced.

Medicine is not an industry. But, like industry, it has rendered its greatest service to the people under a system which places no brakes upon the achievements of the individual, and which encourages any man, in any field, to develop his talents to the utmost.

#### AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

This Board will hold its annual dinner for Diplomates, and others interested in the work of the Board, on Wednesday evening, June 4, 1941, at the Wade Park Manor Hotel, Cleveland, Ohio, immediately following the close of the Part II examinations. Diplomates certified at the pre-

ceding days' examinations will be introduced personally, and there will be several speakers.

Tickets at \$3.25 each may be obtained from Dr. Joseph L. Baer, chairman, 104 S. Michigan Avenue, Chicago, Illinois, or at the Registration Desk during the examination period.



(Number two in a series of six.)

## Common problems in the management of peptic ulcer

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Four striking features of Amphojel, Wyeth's Alumina Gel, are recognized by clinicians

Amphojel provides prompt relief from pain. It permits rapid healing of the ulcer. It cannot be absorbed and eliminates the hazard of alkalosis. It reduces excess acidity without completely neutralizing the gastric contents.

Amphojel is a valuable adjunct in the treatment of melena and hematemesis when administered by continuous drip.

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*Wyeth's  
Alumina Gel*



### Amphojel, Wyeth's Alumina Gel Fluid Antacid    Adsorbent

One or two teaspoonfuls either undiluted or with a little water to be taken five or six times daily between meals and on retiring.  
*Supplied in 12-ounce bottles*

For the Convenience of Ambulatory Patients

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One-half or one tablet in half a glass of water. Repeat five or six times daily between meals and on retiring.  
*Supplied in boxes of 60 tablets*

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Say you saw it in the NEW YORK STATE JOURNAL OF MEDICINE

# Medical News

## County News

### Albany County

Dr Cary Eggleston, assistant professor of clinical medicine, Cornell Medical College, addressed the county society on April 23 at the Albany College of Pharmacy, on "Current Concepts of Coronary Artery Disease and Myocardial Infarction." Discussion was opened by Dr F Stanley Randles.

Prior to the address, a business meeting was held, with Dr Thomas O Gamble presiding.

### Bronx County

The program at the meeting of the county society on April 16 was a Symposium on Sclerosing Therapy (A) Injection Treatment of Varicose Veins by Dr Grant P Pennoyer, (B) Injection Treatment of Hemorrhoids by Dr Frank C Yeomans, (C) Injection Treatment of Hernia by Dr Daniel C Patterson, (D) Discussion by Drs Julius K Littman, Frank M Frankfeldt, and Bradley L Coley, and (E) General Discussion.

The Medical Board of Morrisania City Hospital tendered a testimonial dinner to Drs Nathan B Van Etten, Terry Townsend, S Philip Goodhart, and James M Gates, at the Biltmore on April 26. The proceeds of the dinner were distributed to the Social Service Auxiliary and the Medical Reference Library.

The Bronx Gynecological and Obstetrical Society met at The Concourse Plaza Hotel on April 28. The program was as follows: "The Palatal Arch and the Pelvis" by Drs Abraham J Rongy and Abraham B Tamis, with discussion by Dr Milton J Goodfriend, and "The Role of the Rh Factor in Transfusion Accidents in Pregnancy and in the Pathogenesis of Erythroblastosis Foetalis" by Dr Philip Levine.

The North Bronx Medical Society held a dinner-dance at the Hotel St Moritz on April 27.

### Cayuga County

The annual spring meeting of the county society was held at the Auhurn City Hospital on April 18 with a large attendance of members and physicians from several counties in central New York.

A cardiac clinic was held from 3 to 6 o'clock with presentation and examination of heart cases and discussions by Drs D A Haller and C P Thomas, of Rochester.

A dinner was held at the Osborne Hotel at 7 o'clock with an attendance of nearly 100. Dr Wilfred Sefton, president of the county society, presided. The dinner was followed by a lecture by Dr Ernest P Boas, of New York City, on "Factors Which May Give Rise to Cardiac Infection."

### Chemung County

The county society honored three members who have practiced a half century or more at a dinner on April 16 at the City Club in Elmira. They were Dr George M Case, who has

practiced 57 years, Dr LaRue Colegrove, 54 years, and Dr Floyd E Woodhouse, 50 years. Each has been outstanding in his specialty.

Dr Joseph S Lewis was toastmaster. Drs Arthur W Booth, Ross G Loop, and Reeve B Howland spoke.

Staff physicians of the Arnot-Ogden and St Joseph's hospitals and members of the county society had a joint dinner meeting at the Mark Twain Hotel in Elmira on April 23.

Dr Harry Fish, of Waverly, chief physician of the Tioga General Hospital discussed "Surgical Points." Motion pictures were shown. Dr George R. Murphy presided.

### Erie County

The meeting of the county society on April 21 was devoted largely to preparations for the meeting of the state society.

Subscribers to the Western New York Medical Plan Inc. have increased from 1,215 to 2,673 since December 31, Dr George R. Critchlow, medical director, reported at the organization's annual meeting in Hotel Statler on April 17.

All officers were re-elected by the trustees as follows: president, Dr Harvey P Hoffman, of Buffalo, vice-president, Dr Louis L Klostermyer, of Warsaw, secretary, Dr Harold F Brown, of Buffalo, and treasurer, Merrill E Skinner, of Buffalo.

Trustees are Dr Klostermyer, Dr Arthur L Runals, Olean, Dr Edwin F Comstock, Wellsville, Seeley Pratt, Medina, Walter Howe, Olean, and Dr P J Di Natale, Batavia, and Louis L Berger, Buffalo.

The executive committee is made up of the officers and Supreme Court Justice R. Foster Piper, of Hamburg, Frederick B Cooley and Dr Carlton E Wertz, of Buffalo, and Dr J Louis Preston, of Salamanca.

"Despite the recent epidemic of gripe in the community, which resulted in many claims from subscribers for medical service, the plan has paid the doctors 100 cents on the dollar," Dr Critchlow declared.

"The substantial amount of time," Dr Hoffman said, that has been given by both the professional and lay directors has been devoted unselfishly for the joint benefit of the public and the profession. With such cooperation there should be no need for government intervention in the field of health economics.

### Jefferson County

The county society met on April 24 at the Black River Valley Club. Dinner was served at 6:30. Dr Mervyn B Armstrong, assistant clinical professor of obstetrics and gynecology, Long Island College of Medicine, Brooklyn, spoke on "Hemorrhages of Pregnancy."

### Kings County

The monthly meeting of the Rockaway Medical Society was held on April 17 at the Lawrence Village Park Clubhouse. Dr Clay

[Continued on page 1110]

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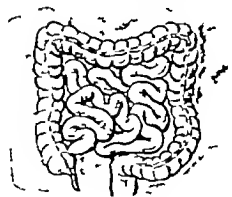
Ovoferin *does not* stain or dissolve tooth enamel because colloidal iron cannot do these things any more than an iron nail can. Ovoferin is iron in colloidal form in extremely minute subdivision and thus in a highly assimilable form. Ovoferin is also practically tasteless and odorless, but it does not rely upon sweetening, flavoring, coating, or masking to achieve these properties—they are inherent in its colloidal state.

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### IN THE INTESTINE



Ovoferin arrives in the intestine in the form of a stable colloidal hydrous oxide which remains assimilable and does not dehydrate the intestinal contents. For 39 years this ease of assimilation has been evidenced by the rapid improvement which patients show when Ovoferin is prescribed. The unassimilated surplus of iron salts, (citrates, sulphates, etc.) on the other hand, reaches the colon as precipitates of iron oxide and salts of the acid radical. The former are dehydrating and may cause constipation while the latter may be irritating to the intestine. But these things cannot happen with Ovoferin because it is not broken down in the alimentary tract. It is already in a colloidal state, the state in which most nutriment must be to be absorbed. Ovoferin's palatability, its freedom from unpleasant properties, its high assimilability assure patient co-operation and better results. Write for physicians' sample.



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"The Pale Child," and Run Down States

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NEW BRUNSWICK, N. J.

[Continued from page 1108]

R. Murray, associate surgeon at the Presbyterian Hospital, spoke on "Fractures in General Practice."

Following Dr Murray's address, discussion was led by Drs I Reitzfeld and Irvin Balensweig. Plans were formulated for the annual dinner and dance.

#### Livingston County

A meeting of Livingston County physicians was held at the Big Tree Inn, Geneseo, on April 16, to discuss the availability of county physicians for military duty.

#### Nassau County

The program of the county society on April 22 included two sound motion pictures, "Good-bye Mr Germ," and "Diagnostic Procedures," and the following scientific addresses: "The Public Health Aspects of Tuberculosis," by Dr Robert E Plunkett, general superintendent, Tuberculosis Hospitals, New York State Department of Health, "X-Ray in the Diagnosis of Tuberculosis," by Dr Ramsay Spillman, roentgenologist, Beekman Street Hospital, "Modern Treatment of Tuberculosis," by Dr H McLeod Higgins, associate, College of Physicians and Surgeons, and associate physician, Bellevue Hospital.

#### New York County

The county society met on April 21 at the Academy of Medicine building and listened to the following program: (1) "The Redistribution of Medical Care," by Algernon Black, Esq, leader of the Society for Ethical Culture in the City of New York, by invitation, (2) "How Politics Threatens Medicine," by Charles A. Togut, Esq, C.P.A., lawyer, New York City, by invitation, and (3) "Medical Thought in the Interest of the Patient," by Dr Roscoe Lloyd Sensenich, trustee of the American Medical Association, South Bend, Indiana, by invitation.

The well-known French literateur, André Maurois, will be the guest of the International Medical Club of New York City at its annual banquet on May 22. His address is to be entitled "At the Bedside of Civilization."

The section of surgery of The New York Academy of Medicine presented this program on May 2: Presentation of Cases (a) "Human Bites of the Hand," by Dr Roland L Maier, with discussion by Norman L Higinbotham, (b) Cases illustrating the first paper of the evening by Dr Lester Blum: Papers of the Evening (a) "The Use of Partial Myotomy in Flexor Tenorrhaphy," by Dr Lester Blum with discussion by Dr John H Garlock, (b) "Technic for Drainage of Suppurative Tenosynovitis of Fingers and Their Extension into the Flexor Base of Forearm," by Dr Hugh Auchincloss with discussion by Dr Philip C Potter, (c) "Puncture Wounds of the Hand," by Dr Condict W Cutler, Jr, with general discussion.

There was a combined meeting of the Academy Section of Obstetrics and Gynecology, Section of Pediatrics, New York Pathological Society and the New York City Committee on Prematurity on April 22. The papers of the evening were (a) "The Pathology of the Premature

Infant," by Dr Sidney Farber, Harvard Medical School, (b) "The Chicago Plan for Reduction of Infant Mortality," by Dr Edith L Potter, University of Chicago School of Medicine, with discussion by Drs Rustin McIntosh, Beryl H Paige, and William E Studdiford.

As part of a survey of public health conditions in New York, the county society has asked 400 labor unions for data to be used in public hearings by the society.

#### Oneida County

The Utica Academy of Medicine and the Utica Dental Society held a joint dinner meeting at the Hotel Utica on April 17. Captain Edwin N Beery, Assistant, Office of the Surgeon, Second Corps Area, Governor's Island, New York spoke on "Medical Profession in a National Emergency."

#### Ontario County

"Soliloquy of a Country Doctor" was the subject of a paper by Dr J Wendell Howard, of East Bloomfield, before members of Canandaigua Medical Society in the Canandaigua Hotel on April 10. Dinner was served to 14, with Dr D A. Eiseline, Shortsville, as host.

#### Orange County

Orange County doctors heard Lieutenant Bernard M Boylan, head of the Narcotic Division of the New York City Police, speak on the illegal traffic of drugs at the spring dinner of the county society in Thayer Hotel at West Point on April 8.

#### Queens County

The county society met on April 29 and heard a paper on "Hypertension" by Dr Arthur M Fishberg, associate physician, Mount Sinai Hospital, with discussion by Drs Goodwin A. Distler and Frank R. Mazzola.

The Friday Afternoon Talks on May 2 and 16 were scheduled as follows: May 2—"Treatment of Rheumatic Infection," by Dr Cary Eggleston, consultant physician, New York Infirmary for Women and Children, physician, Bellevue, associate physician, New York Hospital. May 16—"Diabetes Mellitus," by Dr David D Moore, assistant physician, Presbyterian Hospital, Vanderbilt Clinic, and Neurological Institute.

#### Schenectady County

The Doctors' Orchestra of Schenectady will play at the Bowl of Rice concert at Union College on May 17 for the benefit of the American Bureau for Medical Aid to China.

#### Schuyler County

It is announced that in keeping with the present-day medical fees throughout the state and the costs of medicines the county society is adopting a new fee schedule, effective May 1, as follows: Office Consultation, \$1.50 minimum, plus medicine, House Visits, Central Zone, Day, \$2.50, House Visits, Central Zone, 6 p.m. to 7 a.m., \$3.50, House Visits, Outside Central Zone, Day, \$2.50 plus 25 cents per mile one way, plus medicine, House Visits, Outside Central Zone

[Continued on page 1112]



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[Continued from page 1110]

6 P M to 7 A M, \$3 50 plus 50 cents per mile one way, Hospital Visits, \$2 00 Medicines will be charged for extra according to their value Additional Cases in each family, \$1 00 plus medicines Telephone Consultation, \$1 00 minimum Intravenous Medications, \$2 00 minimum Hypodermic Medications, \$2 00 minimum Consultations, \$5 00 to \$10 plus mileage Wassermann Tests, Premarital, \$2 00 per person Obstetric Fee, \$35 minimum Anesthetic, \$5 to \$10 Central Zone includes Watkins Glen, Burdett, Montour Falls, Odessa

#### Tompkins County

At a regular meeting of the county society on April 15, Drs Arthur D White, Keith Sears, George L Rood, Benjamin F Kingsbury, and Robert H Fisher were all elected to Honorary membership

Dr Robert S Goodhart, of New York City, gave an excellent talk on "The Relations of Vitamins to Disease"

A frequent topic of conversation here is the splendid cooperation given to the local draft examiner We work it out in this manner From 15 to 20 physicians meet on one Sunday afternoon a month in the Old Armory of Cornell University These work in groups of one, two, or three as indicated, and the drafted men are passed on from group to group In this manner about 60 men may be examined in two hours — Reported by Willels Wilson, M D

#### Warren County

Dr James M Flynn, Rochester, president of the State Society, spoke on "Organization in the Practice of Medicine" at the first of a proposed series of joint meetings of the Warren, Washington, and Saratoga County societies at the Queensbury in Glens Falls on April 14.

The meeting, attended by more than 75, also heard Dr Augustus Hambrook, of Troy, a member of the Council of the State Society and

chairman of its public relations and economics committee, speak on new restrictions in the motor vehicle law by which persons with conditions impairing their ability to drive may have licenses refused them or driving permits revoked on recommendation of the family physician

Dr Joseph Lawrence, of Albany, executive secretary of the State Society, reviewed the current medical legislation and spoke on medical preparedness in the physician's relation to the draft

Dr W C Cuthbert, of Hudson Falls, president of the Washington County Society, and Dr Pesquera, of Mt McGregor, president of the Saratoga County Society, also spoke Dr E J Fitzgerald, president of the Warren County Society, presided

#### Westchester County

Thirty-six catastrophe units consisting of two doctors, a nurse, and two first-aid assistants have been set up in the county in the interest of the health defense effort, Dr Edwin G Ramsdell informed the official advisory health preparedness committee on April 17 at a meeting in the County Office Building

Dr Ramsdell, chairman of the emergency and catastrophe committee, said the units, formed in collaboration with the county society and the county Red Cross, would be on call in all county towns in the event of any disaster

Dr Erich Restin, of Mount Vernon, who conducted the meeting, read the report of Carl E Wright, of Port Chester, chairman of the hospital, ambulance service, and supplies committee Mr Wright had found that there are 2,780 beds available in the county and that 2,086 more beds could be installed There are 17 convalescent homes and institutions with a bed capacity of 1,580, although a good percentage of these would not be available to county residents since they are in divisions of New York City institutions Fourteen hospitals have ambulance service

### Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
Benjamin Damsky	48	Fordham	April 24	Bronx
Arthur S Driscoll	53	Fordham	April 27	St George
James R English	73	L I C Hosp	March 2	Manhattan
Charles H Hall	64	P & S N Y	April 21	Brooklyn
Farel Jouard	56	N Y Hom	April 27	Manhattan and New Rochelle
Thomas L Mahony	60	L I C Hosp	April 15	Poughkeepsie
Lazar Sasover	65	Bucharest	January 18	Manhattan
Joseph Spangenthal	71	Buffalo	March 30	Buffalo
John E Sutton	84	Buffalo	April 17	Albion
Delbert S Wilbur	72	Albany	April 19	Naples

#### NEVER?

"There are two words which should not be included in a medical vocabulary always and never"—Saying quoted by J M T Finney, Jr, M D, in address at Louisville

#### A TALKIE

Patient "Doctor, did you get an x-ray picture of my wife's lower jaw?"

Dentist "No, all I could get was a moving picture"—Dental News

(Continued from page 1039)

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Similac (M & R Dietetic)	1111
S.M.A. (S.M.A. Corp)	3rd Cover

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## Workmen's Compensation

April 18, 1941

The Industrial Board of the Department of Labor on March 28, 1941, promulgated the following resolution

*"Resolved, That the Industrial Board hereby rescinds its previous resolutions of June 7, 1940, and July 26, 1940*

*"Further Resolved, That the Industrial Board believes that it is the right of the claimant to furnish x-rays for all purposes in connection with his compensation claim, except that x-rays necessary in connection with final adjustment disposition, or otherwise for purely comparative or evaluation purposes, and not relating to diagnosis, treatment or continuation thereof, shall be furnished by the carrier. The referee shall direct the carrier to furnish the same, unless it appears that special circumstances require issuing a direction to the claimant to secure the x-rays. In such instance the referee shall furnish the claimant with a description of the nature of the x-rays required."*

In explanation of the above, please note that it is the right of the claimant through his physician to furnish x-rays for all purposes in connection with his compensation claim relating to the diagnosis, treatment, and continuation of treatment. Where x-rays are necessary, however, in connection with the final adjustment of a claim by the Department of Labor or for comparative or evaluation purposes by the Department and not related to the diagnosis or treatment of the case, such x-rays shall be furnished by the insurance carrier. Under these circumstances the referee will direct the carrier to furnish them. If in the opinion of the referee, however, there are special circumstances in connection with the closing of the case or otherwise for evaluation or comparative purposes, the referee may issue a direction to the claimant to provide the x-rays and in such instance the referee shall furnish the claimant with a note containing a description of the nature of the x-rays required. The above resolution rescinds all previous resolutions issued by the Industrial Board regarding the supplying of x-rays for final adjudication of cases.

Should a claimant bring to a physician a report of a hearing and medical examination which indicates that the claimant is to be re-examined "with x-rays" for final adjudication of the claim, the physician should not refer the patient to an x-ray specialist unless first ascertaining from the carrier whether the carrier has not been directed to provide the x-rays by the referee. Should a claimant bring a direction from the referee requesting claimant to provide x-rays, the physician should provide only such x-rays as are requested in the order. If a physician or x-ray specialist is in doubt as to who is to provide the x-rays in an old case coming up for a hearing, he should, before making the examination, contact the Labor Department or the Insurance Carrier to ascertain whether an order for x-rays has been issued and to whom

DAVID J. KALISKI, M D  
Director

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# Woman's Auxiliary

To the Medical Society of the State of New York

## County News

**Broome** The second anniversary of the auxiliary was celebrated March 26 at the Binghamton Country Club by having a dinner-dance. Mrs C D Squirres was chairman. Mrs J H Robertson, president, introduced Dr G H Armstrong of the I B M Corporation who spoke on "Some Interesting Facts You May Not Know About Industry."

**Madison** Mrs M Melamed, of Oneida, publicity chairman writes "The auxiliary to the Madison County Medical Society welcomed a visit from Mrs L H Kice, state president, March 26. They entertained at a spring dinner and afterward spent an informal evening at the home of Mrs O Pfoff, state historian. Out of town guests who were introduced by Mrs C Earl, president of the auxiliary, were Mrs C E Potter, Mrs F Erwing, and Mrs E Neptune, of Syracuse, and Mrs James Fanell, president of Oneida County Auxiliary.

**Montgomery** Mrs Albert Vander Veer, of Albany, legislative chairman, was guest speaker at a luncheon meeting held April 14 at the Elks Club. In her address she stated that legislation is one of the most important functions of the organization, and it is the duty of the committee to acquaint itself with bills and important legislative matter that concern the medical profession. Mrs E H Ormsby will be the delegate at the state convention.

**Onondaga** The regular monthly meeting of the auxiliary was held in the home of Mrs Edward C Reifenshtein, Sr, on April 1, 1941. Mrs Foster C Rulison acted as Hostess Chairman. Mrs Albert Vander Veer, of Albany, state legislative chairman, was the guest speaker, and she discussed several current legislative problems. The members of the board of the auxiliary gave a dinner in Mrs Vander Veer's honor at the Hotel Syracuse. Mrs Edgar M Neptune, president, and Mrs W W Street, our first vice-president, entertained the members of the board at luncheon on March 25 following their regular meeting in the home of Mrs W W Street. A delightful afternoon was enjoyed by all.

**Orange** A luncheon meeting of the executive board convened at the Mitchell Inn, on April 1. Dr Theodore W Neumann, of Central Valley, spoke about plans for an annual Health Institute to be held at the Middletown State Hospital on May 6, 1941. Following the executive meeting the first regular meeting took place at the home of Mrs Harry F Pohlmann in Middletown. Thirty members and guests were present. Six new members were welcomed to the organization. Mrs Harry Chant, of Middletown, chairman of the Public Relations Committee gave the following report. Plans for committee activities for the year 1941 were considered at a meeting of the executive board held at the home of the president, Mrs H F Murray, Port Jervis, on January 7,

1941. This committee has continued to co-operate with the Middletown League of Women Voters, American Legion Auxiliary, Parent Teacher groups, and Child Study groups by providing club talks for use at meetings. In addition, the talk "Rheumatic Heart Disease" was provided for reading before the faculty of the Washingtonville School and St Joseph's Parochial School, Middletown. These groups are continuing to utilize club talks as they become available. Plans are being made for presentation of the talk "Preventive Medicine and Child Health" at a meeting on Family Life to be conducted by the Home Bureau in Middletown on April 8, 1941. The regional director of the Parent Teachers Association is planning to have a talk given before their western New York conference. Mrs George Kenny, of Port Jervis, chairman of Legislation, reported that she had attended the Doctor's Legislative Committee in Albany. After the business session we were entertained with sound movies on "Driving Safely" and a colored movie of Middletown Flower Gardens.

**Oswego** The auxiliary is making "Aid for Britain" its special work for April. Mrs H J La Tulip, chairman, has contacted hospitals and members of lay organizations from whom she has received favorable response. A luncheon meeting was given at the Fulton Club, April 21.

**Rockland** An unusually fine program delighted the doctor's wives at a luncheon meeting at the Hotel St George, Nyack, on April 22. Mrs T W Olmstead had the pleasure to present Mrs L H Kice, state president, as their guest of honor and speaker. Mrs Kice in her charming and able manner told the group of the types of health and social programs which it could carry out and their value to a community. A program of Scottish music, which was explained by Mrs S Kivalwasser, was sung by Mrs F Woodward, accompanied by Mrs Wm Walker. Mrs Olmstead announced that Dr S W S Toms has turned over his entire surgical equipment for British War Relief. Our praises to Rockland County Auxiliary.

**Saratoga** Twenty-six members attended a meeting April 1 at the Cramer House to hear Miss Elizabeth Henry, supervisor on Maternal Welfare, speak on public health work as conducted in Saratoga County. The final plans have been made to hold a Mental Hygiene Clinic at the Saratoga High School on May 22. In the afternoon Dr Frances Vosburg will speak on "The Adjustment Period in Adolescent Girls," and in the evening Dr F L Patry will speak on "Mental Hygiene for Business Women." For the recreation and enjoyment of its members the annual dinner-dance took place on April 24 at Newman's Lake House.

# Hospitals and Sanitariums

## Institutions of Specialized Treatments



SERVING AMERICA'S MOST DENSELY POPULATED MARKET

Sanitariums appearing in this department of the JOURNAL are conveniently located to a population greater than that of many of the countries now overrun by aggressors across the seas

The Metropolitan District of Greater New York, undoubtedly the richest buying center in the world, contains one-tenth of the people of the United States. Now comprising the five city boroughs and twenty-three suburban counties, this area reaches sixty miles in every direction and has a total population of over twelve millions. Some idea of the number of persons living in the area may be gathered from the fact that the total would make five cities as large as Chicago, Philadelphia, Detroit, Los Angeles, and Cleveland, and still leave a sufficient number to make three more cities with populations of a million each.

The area covers over 10,000 square miles, of which 4,134 are in New York State, 4,468 in New Jersey, and 631 in Connecticut. Yet from the heart of the city to the very finest private sanitariums and hospitals the traveling time is no more than an hour or two. This is one of the chief features that makes these sanitariums

more serviceable to the practicing physicians in the territory who desire to cater to the wish of relatives wanting the patient within easy visiting distance.

While distance may often be an issue with the immediate family of the patient, the recommending physician is probably more often confronted with the notion that treatment at private sanitariums is a luxury. This mistaken idea is due rather to lack of information and unsupported conclusions than to any logic. The same persons who may object to considering the use of a sanitarium will think nothing of paying from \$4.50 to \$7.00 and more per day for a single room only at a respectable hotel, or from \$30.00 to \$50.00 per week.

The personal service included is limited almost entirely to "making up the bed" once a day. If meals are also considered, the total weekly cost mounts up to from \$50.00 to \$70.00 or more. This for living accommodations and food for a healthy individual needing little if any personal attention.

On the other hand, the patient at a private sanitarium must have a room, must have meals and room service.

(Continued on page 1119)

## FALKIRK IN THE RAMAPOSS

A sanitarium devoted exclusively to the individual treatment of MENTAL CASES. Falkirk has been recommended by the members of the medical profession for half a century.

Literature on Request

ESTABLISHED 1889

THEODORE W. NEUMANN, M.D., Phys-in-Chg  
CENTRAL VALLEY, Orange County, N. Y.



## 'INTERPINES'

Goshen, N. Y.

Phone 117

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Disorders of the Nervous System  
BEAUTIFUL—QUIET—HOMELIKE

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FREDERICK W. SEWARD, M.D., Director  
FREDERICK T. SEWARD, M.D., Resident Physician  
CLARENCE A. POTTER, M.D., Resident Physician

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INSTITUTION

AUTHORITATIVE  
INFORMATION  
ON POST-MEDICAL  
ASSISTANCE IN  
ALCOHOLISM  
ON REQUEST

## THE CHAS. B. TOWNS HOSPITAL

41 SUCCESSFUL YEARS

TREATING DRUG AND  
ALCOHOL CASES

EXCLUSIVELY

293 Central Park West, New York, N. Y.

# Books

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Mental retardation many times is not recognized in early youth, and this must certainly be differentiated from other environmental disturbances that may cause the child to misbehave.

Part II of the book is taken up with a discussion of more specific disturbances, such as stealing, lying, dreaming, backwardness, nervous movements, enuresis, sex difficulties, speech defects, lack of concentration, and so on.

It is a worthwhile book for any practitioner to have in his library.

THURMAN B. GIVAN

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It is indeed interesting reading to follow the story as given in the pages of this book. As is true of so many organizations, this one, too, had its trials and tribulations which necessitated several reorganizations before it began the course it has so successfully followed. Dr. Wm. Gerry Morgan is the chief contributor. He narrates the founding of the College, giving a brief biographic sketch of its seventeen presidents and of many other officers whose influence was of value in the progress and in the accomplishments of the College. Dr. Morgan writes clearly and interestingly. Other contributors to this volume of 275 pages are Edward R. Loveland, the executive secretary, Drs. Maurice C. Pincoffs, Walter L. Biering, Charles F. Martin, and James A. Miller. Among its past-presidents are names of noted clinicians, among its over 4,000 Fellows and 2,300 Associates are many prominent clinicians of the country. As organized and conducted now the American College of Physicians will grow in power and prestige and exert a profound influence on American medicine.

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In this table of contents, anyone interested in the problem of the provision of medical care from the legal and other points of view will find much of value.

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ALEC N. THOMSON

**A Surgeon's Life.** The Autobiography of J. M. T. Finney. Octavo of 396 pages. New York, G. P. Putnam's Sons, 1940. Cloth, \$3.50.

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Dr. Finney's experiences in the World War of 1914 to 1918 are modestly and interestingly told. He tells us of his successes but is big enough to include his failures. His philosophic observations on doctors and the practice of medicine ring with a note of optimism when he says "Are our ideals too high? After over fifty years of close association with members of the profession, frankly, I do not think so."

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VOLUME 41

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more, thoroughly trained medical men as in times of peace." We wrote to Dr. Wilbur.

March 18, 1941, Dr. Wilbur replied, in part "that it requires time and training to prepare a young doctor to take his place in the profession at the moment I am interested as much in recruiting at the bottom, from the colleges to the medical schools, as I am in protecting the students now in actual training. At present there is considerable confusion between political expediency and the actual requirements of trained men to fight a modern war. We should all unite in trying to educate ourselves and the public not to the exemption of prospective medical students or actual medical students but to give them the adequate training so that they can serve our country in the very best way."

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On April 28 and 29 two resolutions were

introduced on the floor of the House of Delegates at the One Hundred and Thirty-fifth Annual Meeting of this Society relating to deferment of medical students. Through the Public Relations Bureau these were released to the press and the wire services, and they evoked widespread news and editorial comment.

The May 1 issue of the JOURNAL again carried a lead editorial "Medical Student Training." In this, much factual material obtained through the good offices of Dr Willard C Rappeleye, secretary of the Association of American Medical Colleges,

was published. This followed, by four days, an interview by Dr Malcolm Goodridge of The New York Academy of Medicine, published in the New York Times, April 27, on the same subject—namely, the "possible shortage of doctors for both military and civilian needs."

We comment at length upon this chronology so that the members of this Society may feel that they, through their JOURNAL and their Public Relations Bureau, have actively participated in a successful campaign of public instruction upon a most vital subject.

## See Your Legislators

The House of Delegates at the One Hundred and Thirty-fifth Annual Meeting of the Medical Society of the State of New York voted unanimously "to adopt an expression of appreciation to the members and officers of the Legislature, and especially to the Governor, for the courteous reception extended to the representatives of the medical profession and the thoughtful consideration they have given medical and public health measures that have come before them."

Legislators are not mindreaders, however disposed they may be to cooperate with their constituents and with the medical profession. They are not mindreaders but lawmakers. To make laws

wisely they must be accurately informed. And especially is this true concerning matters medical, since such matters are frequently highly technical.

It is, therefore, up to the doctors of medicine who know about these things to keep closely in touch with their representatives not only in Albany but in Washington also. Cooperation implies equal effort on both sides. No legislator can cooperate with an indifferent, silent, or uncommunicative profession. Let every member of this Society get in contact with his representative or senator often. This is an obligation that medicine will neglect at its own peril and that constitutes a disservice to the public.

## Effective Cooperation

The seven general hospitals of Rochester, recognizing their responsibility to the community, have given, during the past year, a brilliant demonstration of the possibility and value of cooperative effort toward a single goal. A drive was organized through the Monroe County Medical Society to secure better treatment of pneumonia throughout the city. In the January issue of the Monroe County Bulletin, striking evidence of preliminary success was presented. Study of the mortality figures of cases treated in these seven cooperating hos-

pitals leaves a distinct impression of real achievement. It is difficult to quantitate the achievement since there are no figures available with which to compare those reported. Available figures on pneumonia mortality come, on the one hand, either from great centers where pneumonia is the object of intense study and special interest or from wide areas as reported by physicians and hospitals to the health authorities. The Rochester cooperative study represents, on the other hand, cases of pneumonia as admitted and treated in the general hospitals of a

large city Despite the lack of comparable data, a gross mortality of 10.7 per cent, with a mortality of 12.6 per cent in all adults, in cases of proved and typed pneumococcal pneumonia is impressive.

The spirit of friendly cooperation and mutual understanding developed during the first year of the cooperative study has led to a decision to continue this par-

ticular work and to a hope that the same underlying principle may be applied to other problems of general community interest and hospital responsibility. The men who have been able to bring this about deserve hearty congratulations on having established an unusual and particularly valuable method of approach to serious community problems.

## Correspondence

### NEW YORK CITY EXCISE TAX ON GROSS RECEIPTS

THE CITY OF NEW YORK

EMERGENCY REVENUE DIVISION

CORRESPONDENCE SECTION, BUSINESS TAX, ROOM 629  
50 LAFAYETTE STREET, NEW YORK CITY  
WORTH 2-4780

May 9, 1941

Medical Society of the State of New York  
232 Madison Ave  
New York, New York

Gentlemen:

You are hereby notified for the benefit of the members of your society that the New York City Excise Tax on Gross Receipts is due on June 15, 1941. The tax is imposed for the privilege of carrying on or exercising for gain or profit within the City of New York any trade, business, profession, vocation, or commercial activity during the period commencing July 1, 1940, and ending June 30, 1941, or any part thereof. Where a person subject to tax was engaged as described hereinabove during the whole of the calendar year 1940, he is required to measure the tax by the gross receipts for such calendar year.

In view of the foregoing, returns are to be filed by physicians on Form 41B and the gross receipts from the profession or vocation engaged in should be reported as Item 5 on Page 1 of the return. Profits from stock and bond transactions, interest received on bank deposits, notes, bonds, loans, etc., and dividends received on

stocks of domestic and foreign corporations need not be reported when the receipts therefrom constitute transactions of a strictly personal nature. In reporting the gross receipts no deduction may be taken for salaries and office expenses. The tax is to be computed at the rate of one-tenth of 1 per cent.

There is no exemption granted under the current Gross Receipts Tax Law. However, there is no tax imposed where the gross receipts from the profession or vocation engaged in do not exceed \$10,000 per annum. In such event, no return need be filed.

Returns must be filed on or before June 15, 1941, with the Bureau of City Collections in the borough in which the taxpayer maintains his office. A remittance for the total amount of tax due, drawn to the order of the City Collector, must accompany the return when filed. Tax blanks will be mailed to all taxpayers who have filed returns under prior laws.

Further information may be obtained from the Emergency Revenue Division, 50 Lafayette Street, Manhattan (WORTH 2-4780).

Very truly yours,

SAMUEL ORR  
Special Deputy Comptroller

### APPOINTMENTS IN REGULAR AND RESERVE MEDICAL CORPS, U S NAVY

HEADQUARTERS OF THE COMMANDANT THIRD NAVAL DISTRICT

FEDERAL OFFICE BUILDING, 90 CHURCH STREET, NEW YORK CITY

To the Editor

The Surgeon General of the Navy has announced that there are about 800 vacancies in the General Class of the Medical Corps Reserve, physicians under 35 years of age, and 100 vacancies in the Specialist Class. The greatest need in the Specialist Class is for radiologists and psychiatrists.

He has also recently sent out the following announcement relative to appointments in the Medical Corps of the regular Navy:

#### Examinations for Appointments in the Medical Corps

The next examination for appointments as Assistant Surgeon, U S Navy, Lieutenant (junior grade), Medical Corps, U S Navy, will be held at all major medical department activities on August 11 to 15, inclusive. Applications for this examination must be in the Bureau of Medicine and Surgery not later than July 15.

Applicants for appointment as Assistant Surgeon must be citizens of the United States, more

than twenty-one (21) but less than thirty-two (32) years of age at the time of acceptance of appointment, and graduates of a Class A medical school who have completed at least one year of intern training in a hospital accredited for intern training by the council on Medical Education and Hospitals of the American Medical Association

An examination for appointment as Acting Assistant Surgeon for intern training in a naval hospital accredited for intern training by the Council on Medical Education and Hospitals of the American Medical Association will be held at all major medical department activities on June 23 to 26, inclusive. Students in Class A medical schools who will complete their medical education this year are eligible to apply for these appointments, and if successful will receive their appointments approximately one month after the date of the examinations. Students in Class A medical schools who will have completed their third year of medical education this year are eligible to take this examination, and if successful will receive their appointments on or about July 1, 1942, after they have completed their medical education.

Applicants for appointment as Acting Assistant Surgeon for intern training must be citizens of the United States, more than twenty-one (21)

but less than thirty-two (32) years of age at the time of acceptance of appointment. Acting Assistant Surgeons are appointed for a period of eighteen months. After the appointee has served as an intern in a naval hospital for twelve months, he is eligible for and may take the examination for appointment as Assistant Surgeon, U S Navy.

A circular of information listing physical and other requirements for appointment as Assistant Surgeon and Acting Assistant Surgeon, subjects in which applicants are examined, application forms, etc., may be obtained from the Bureau of Medicine and Surgery, Navy Department, Washington, D C, upon request.

Assistant Surgeons and Acting Assistant Surgeons for intern training are appointed in the rank of Lieutenant (junior grade), Medical Corps, U S Navy. The pay and allowances for an officer of this rank total \$2,699 per year if he has no dependents and \$3,158 per year if he is married or has dependents.

The District Medical Officer of the Third Naval District at 90 Church Street, New York City can furnish further information about either the Regular or Reserve Medical Corps of the Navy.

Sincerely yours,

E C WHITE

## MENTAL HYGIENE DIVISION

DEPARTMENT OF HEALTH, COUNTY OF SUFFOLK, RIVERHEAD, NEW YORK

May 15, 1941

*To the Editor*

Dr George M Lott has been appointed as director of the Mental Hygiene Division of the Suffolk County Department of Health.

He is a graduate of the University of Michigan with a degree of A B in 1922 and received his M D degree at the University of Colorado School of Medicine in 1928.

From August, 1928, to August, 1930, he was intern and resident at the Henry Ford Hospital at Detroit, Michigan. He was a resident of the Boston Psychopathic Hospital from September, 1930, to August, 1931. He was a Fellow in Psychiatry at the Institute for Child Guidance in New York City from July, 1931, to July, 1932, and during the same time was assistant physician at the Cornell University Out-Patient Clinic in the Department of Psychiatry.

From September, 1932, to September, 1936, he was director of the Bureau of Child Guidance and state psychiatrist for the State of Rhode Island. He was psychiatrist in the Bureau of Child Guidance of the Board of Education of the City of New York from September, 1936, to September, 1939, since which time he has been engaged in private practice and connected with the Long Island Home at Amityville, Long Island.

He is a diplomate of the National Board of Medical Examiners in 1930 and a diplomate of the American Board of Psychiatry and Neurology in 1936 and a qualified psychiatrist under the Mental Hygiene laws of New York State.

He is a member of the following professional societies: Fellow of the American Medical Association, American Psychiatric Association, American Orthopsychiatric Association, New England Society of Psychiatry, New York Society for Clinical Psychiatry, and National Educational Association.

Following the announcement that this service would be established in Suffolk County and would apparently be the first of its kind in a County Health Department, Dr Thomas Parran, surgeon general of the United States Public Health Service, wrote to the Department as follows:

"Please accept my heartiest commendation for this forward step in not only recognizing that to a large degree mental health is purchasable, but also because you have identified mental health as a public health problem and accept responsibility for such work in your organized health department. You are expressing an attitude which reflects mine in this matter and one which the Public Health Service intends to encourage among organized health agencies as vigorously as possible."

It is also interesting to note that the state commissioner of health, Dr Edward S Godfrey, deems the care and prevention of mental illness to be a proper function of health departments in this state and that state aid has been granted for this service in the same manner as other services which have long been recognized as routine functions of health departments.

Very truly yours,

A T DAVIS, M D  
Commissioner of Health

# *Symposium on Medical Problems in National Defense*

## FROM THE VIEWPOINT OF THE ARMY MEDICAL OFFICER

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THIS subject permits a wide range for discussion. My comments on some of the problems that particularly concern all of us at this time will be as brief as possible.

### Medical Department Officers

The Present War Department program calls for a Regular Army of 375,000. The National Guard, which has been called the first line of defense, has 225,000 men, and the selectees will number 800,000, so that the total strength of the United States Army will be 1,400,000 by July 1 of this year.

The Officers Reserve Corps has about 125,000 officers, and approximately one-fifth of this number are in the Medical Department. These include members of the Medical, Dental, Veterinary, Sanitary, and Medical Administrative Corps. The Medical Reserve Corps, which preceded the Line Reserve Corps, was established by act of Congress, April 23, 1908. In its infancy it contained few Reserve officers, but those chosen were the leading physicians of the medical profession. The influence and prestige these illustrious men contributed by their service to the Medical Department of the Army cannot be overestimated. Their action was the impetus for others to follow in their footsteps, and as a consequence the flower of the medical profession participated in the World War. We, the medical profession, are all proud of the magnificent record achieved in those eventful days.

It has been estimated that our Medical Department personnel requirements may be anywhere from 15,000 to 40,000 commissioned officers, depending upon the extent of troop mobilization. There are over 175,000 physicians in the United States, of whom nearly 115,000 are members of the American Medical Association. The Second Corps Area, comprising the states of New York, Delaware, and New Jersey, has a population of approximately 17,500,000. There are, within these three

states, over 33,500 physicians, 27,000 of whom reside in the State of New York. Of this number approximately 2,400 are members of the Medical Reserve Corps. In this Corps Area we have one doctor for about every 550 people, whereas in the remainder of the United States there is one doctor for every 800 people. In other words, there are approximately one and one-half times as many physicians per unit of population in this Corps Area as there are in the remainder of the U S.

Our initial medical officer requirements are approximately 6.5 for each one thousand men in the military service—a total of 9,100. Since we are now on a training program basis, we must draw about 6,800 medical officers from civilian and Reserve sources. The remainder of our medical officer requirements should be supplied from the Medical Department of the Regular Army. About 70,000 hospital beds will have to be made available for military personnel in station or camp hospitals, and an additional 14,000 beds will be required for general hospitals. We will need nearly 60 doctors for each one thousand hospital beds alone. In the Second Corps Area there should be at least 5,210 hospital beds.

One of the problems that face us today is how can we best meet our medical officer requirements? On April 1 of this year there were 3,631 Medical Department Reserve officers in this Corps Area. Of this number, 1,015 were either on extended active duty in the Army or awaiting orders. Our records in the Second Corps Area show that approximately 20 per cent of the medical officers physically examined have been found disqualified. Nearly every Medical Reserve officer in this Corps Area below the grade of Colonel has received notice to obtain a physical examination and hold himself in readiness for call to active duty.

Since January 1, 1941, for various reasons we have lost 279 Medical Reserve officers, more than half of these losses were due to resignations. Another 120 resignations are under consideration at the present time.

Read by invitation at the Annual Meeting of the Medical Society of the State of New York, Buffalo, New York, April 30, 1941.

than twenty-one (21) but less than thirty-two (32) years of age at the time of acceptance of appointment, and graduates of a Class A medical school who have completed at least one year of intern training in a hospital accredited for intern training by the Council on Medical Education and Hospitals of the American Medical Association.

An examination for appointment as Acting Assistant Surgeon for intern training in a naval hospital accredited for intern training by the Council on Medical Education and Hospitals of the American Medical Association will be held at all major medical department activities on June 23 to 26 inclusive. Students in Class A medical schools who will complete their medical education this year are eligible to apply for these appointments, and if successful will receive their appointments approximately one month after the date of the examinations. Students in Class A medical schools who will have completed their third year of medical education this year are eligible to take this examination, and if successful will receive their appointments on or about July 1, 1942, after they have completed their medical education.

Applicants for appointment as Acting Assistant Surgeon for intern training must be citizens of the United States, more than twenty-one (21)

but less than thirty-two (32) years of age at the time of acceptance of appointment. Acting Assistant Surgeons are appointed for a period of eighteen months. After the appointee has served as an intern in a naval hospital for twelve months, he is eligible for and may take the examination for appointment as Assistant Surgeon, U. S. Navy.

A circular of information listing physical and other requirements for appointment as Assistant Surgeon and Acting Assistant Surgeon, subjects in which applicants are examined, application forms, etc., may be obtained from the Bureau of Medicine and Surgery, Navy Department, Washington, D. C., upon request.

Assistant Surgeons and Acting Assistant Surgeons for intern training are appointed in the rank of Lieutenant (junior grade), Medical Corps, U. S. Navy. The pay and allowances for an officer of this rank total \$2,609 per year if he has no dependents and \$3,158 per year if he is married or has dependents.

The District Medical Officer of the Third Naval District at 90 Church Street, New York City, can furnish further information about either the Regular or Reserve Medical Corps of the Navy.

Sincerely yours,

E. C. WHITE

## MENTAL HYGIENE DIVISION

DEPARTMENT OF HEALTH, COUNTY OF SUFFOLK, RIVERHEAD, NEW YORK

May 15, 1941

*To the Editor:*

Dr. George M. Lott has been appointed as director of the Mental Hygiene Division of the Suffolk County Department of Health.

He is a graduate of the University of Michigan with a degree of A.B. in 1922 and received his M.D. degree at the University of Colorado School of Medicine in 1928.

From August, 1928, to August, 1930 he was intern and resident at the Henry Ford Hospital at Detroit, Michigan. He was a resident of the Boston Psychopathic Hospital from September 1930, to August, 1931. He was a Fellow in Psychiatry at the Institute for Child Guidance in New York City from July, 1931, to July, 1932, and during the same time was assistant physician to the Cornell University Out-Patient Clinic in the Department of Psychiatry.

From September, 1932, to September, 1936, he was director of the Bureau of Child Guidance and state psychiatrist for the State of Rhode Island. He was psychiatrist in the Bureau of Child Guidance of the Board of Education of the City of New York from September, 1936, to September, 1939, since which time he has been engaged in private practice and connected with the Long Island Home at Amityville, Long Island.

He is a diplomate of the National Board of Medical Examiners in 1930 and a diplomate of the American Board of Psychiatry and Neurology in 1936 and a qualified psychiatrist under the Mental Hygiene laws of New York State.

He is a member of the following professional societies: Fellow of the American Medical Association, American Psychiatric Association, American Orthopsychiatric Association, New England Society of Psychiatry, New York Society for Clinical Psychiatry, and National Educational Association.

Following the announcement that this service would be established in Suffolk County and would apparently be the first of its kind in a County Health Department, Dr. Thomas Parran, surgeon general of the United States Public Health Service, wrote to the Department as follows:

"Please accept my heartiest commendation for this forward step in not only recognizing that to a large degree mental health is purchasable, but also because you have identified mental health as a public health problem and accept responsibility for such work in your organized health department. You are expressing an attitude which reflects mine in this matter and one which the Public Health Service intends to encourage among organized health agencies as vigorously as possible."

It is also interesting to note that the state commissioner of health, Dr. Edward S. Goddard, deems the care and prevention of mental illness to be a proper function of health departments in this state and that state aid has been granted for this service in the same manner as other services which have long been recognized as routine functions of health departments.

Very truly yours,

A. T. DAVIS, M.D.  
Commissioner of Health

**Oath of Office** There are some instances now where physicians are serving in the capacity of enlisted men because of failure to initiate papers promptly for a commission in the Reserve Corps. If a doctor or dentist in your community does not hold a commission in the Reserve Corps and he is called before a local Selective Service Board and placed in Class I-A, he should immediately report with such information to the Executive Officer of the Military Area in which he resides and make application for a commission in the Reserve Corps.

At the present time there are several Medical Corps vacancies in the authorized War Department procurement objective for this Corps Area. When all War Department vacancies have become filled, the doctor selected in Class I-A will be required to serve as an enlisted man when inducted unless a vacancy in the Medical Corps becomes available. The Dental, Veterinary, and Sanitary Reserve Corps do not have a vacancy at this time, and those who are inducted into the Army serve in the status of enlisted men until a vacancy exists. It is considered highly advantageous for doctors who are eligible for service under the provisions of the Selective Service Act to make application for a commission in the Medical Reserve Corps at once, if eligible.

I would also strongly recommend that all senior medical students make application for a commission in the Reserve Corps immediately and not wait until they have been graduated in medicine. If eligible, a senior medical student can be granted a commission as First Lieutenant in the Medical Reserve Corps of the Army immediately upon graduation from fully accredited medical schools in the United States, even before he appears before a State Board and has secured a license to practice medicine. He should understand that accepting a commission in the Reserve Corps will not interfere with his internship. As soon as commissioned he should present his letter of appointment to his local Selective Service Board for reclassification. The most logical time for a Reserve officer to serve his year on extended active duty in the military service is upon the completion of his internship before he has established himself in civil practice.

We receive many requests for exemption from active duty of Medical Reserve officers who are serving a residency in some hospital. Each such application is carefully investigated, and wherever it is possible to do so we

grant a deferment. Our action depends upon many factors, including the exigencies and demands of the service. It should be clearly understood that a physician is not exempt because he is serving a residency.

### Affiliated Hospitals

The War Department has authorized a certain number of affiliated units sponsored by civilian hospitals. The object of such affiliation is to provide integrated hospital units with qualified, coordinated personnel for early active military duty in the event of a national emergency.

A senior Reserve officer for each unit will, upon approval of the Surgeon General, be designated as Unit Director. He will be charged with the peacetime organization, administration, and training of the units. The remaining appointments will be in grades appropriate for the position to which the individuals are to be assigned as authorized in War Department Tables of Organization. These appointments will be restricted to individuals who are (1) members of the staffs or faculties of, or associated with, sponsoring institutions, (2) between the ages of 23 and 55 years, and (3) physically qualified for appointment. Prior to mobilization of the unit, an officer of the Medical Corps, Regular Army, will be assigned to each affiliated unit as Commanding Officer to effect its mobilization.

### Physical Examination of Selective Service Registrants

The Selective Service Regulations prescribed by Executive Order No. 8570, signed by the President, October 18, 1940, describe the organization, administration, registration, classification, selection, delivery, induction, finance, and physical standards pertaining to Selective Service. The physical standards prescribed for local and medical advisory boards for Selective Service are, of course, precisely the same as MR 1-9, which is used by Army Induction Boards. Local doctors throughout the Corps Area have generously given their services without charge in the conducting of physical examinations of registrants at the place each local board functions. There exists no group more patriotic than the American physician who faithfully performs this work, the nature of which at times undoubtedly creates unjust criticism.

In connection with this work the State Council Committees on Medical Prepared-

In so many instances, members of the medical profession say they want to enter the service only in case of war. They fail to realize we will soon have an Army of 1,400,000 men who must have medical care and that our Medical Department personnel needs training just as much as the remainder of the Army.

Late last summer all Medical Reserve officers filled out two questionnaires. One asked whether they were available for active duty and, if not, how much deferment was desired, giving reasons for deferment. The other questionnaire requested information regarding the type of practice and the specialty pursued, if any, by each officer. In addition, we have a file of each Medical Department officer which shows his military record, including previous assignments and duties performed, promotions, efficiency record, etc. These are the three chief sources of information used at the Corps Area Surgeon's Office in determining our recommendations pertaining to active duty assignments.

When an officer has been notified that he has been selected for active duty he should report at once for his physical examination. This is important because he may be found physically disqualified. In that case he would be spared inconvenience and disruption of his practice.

The assignment of Medical Department officers by the Second Corps Area is not limited to the Second Corps Area Service Command. Our requisitions call for medical personnel for the following additional places: tactical units of the First Army, First and Fourth Corps Area Service Command units, Army Medical Center, Medical Field Service Training School at Carlisle Barracks, Medical Replacement Centers, General Hospitals, and periodical requests for foreign service.

You will recall that a Medical Preparedness Committee was appointed by the American Medical Association House of Delegates at the request of the Surgeon General of the Army, Navy, and the United States Public Health Service. This committee and the Division of Medical Sciences of the National Research Council have materially assisted in the classification and procurement of physicians for the Army. The American Medical Association maintains a roster of civilian physicians, classified as to professional specialties and proficiency, who have agreed to accept commissions in the Army of the United States when needed for immediate active duty during a national emergency. The Surgeon General of the Army has a medi-

cal officer of the Regular Army on duty at the Headquarters of the Sixth Corps Area as a representative of his office in all matters pertaining to the Medical Reserve Corps and the American Medical Association.

Medical Department officer vacancies in a Corps Area which cannot be filled by the detail of a qualified Reserve officer in the Corps Area are reported to the War Department, such vacancies are filled from another Corps Area or by the War Department if an officer is available. If a qualified Reserve officer cannot be found, the Surgeon General notifies his representative at Headquarters, Sixth Corps Area, stating the physician's qualifications needed to fill the specific vacancy. The Surgeon General's representative will then secure the recommendations of the American Medical Association and forward the information required to the appropriate Corps Area Commander. The physician selected is then requested to appear for a physical examination. If found physically qualified, the physician will be requested to furnish a properly completed application for a commission. No appointments are made of applicants over 55 years of age.

We receive frequent inquiries relative to interns in civilian hospitals. An intern holding a commission in the Medical Reserve Corps is not required to enter on active duty before completing his year's internship. There are a few who have a longer internship, so far in this Corps Area we have not called any of these physicians to active duty. If it should become necessary, an effort would be made to assign them to a large hospital where they could finish their rotating internship and receive credit for same. In view of the anticipated annual demand for approximately 4,000 Medical Reserve officers to replace those who have completed twelve months' training and service, further deferment will depend on contingencies at that time. When an intern makes application for commission, he must sign a statement to the effect that he will accept one year of extended active duty and not request resignation on account of dependents.

It should be clearly understood that a doctor within Selective Service age requirements who is not serving an internship is not exempt from Selective Service. All physicians of draft age eligible for call under the Selective Service Law should make application for a commission in the Medical Reserve Corps immediately. It takes some time to complete all papers and actually obtain the

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TABLE 1—CAUSES FOR REJECTION

Regulation Period	Examined	Rejected	Percentage							Mental and nervous	Musculo-skeletal and feet	Total
			Teeth	Eyes	Ears	Lungs	Heart	Hernia	Venereal			
1	5,178	994	27.0	16.3	5.8	10.0	5.4	4.0	5.4	7.0	6.6	19.2
2	8,090	1,621	18.5	14.7	10.1	10.7	0.2	4.7	10.7	12.1	6.9	18.0
3	10,763	1,835	17.5	16.5	8.7	7.4	6.4	5.4	9.3	14.2	7.2	17.1
4	11,894	1,735	16.0	14.1	8.0	8.8	5.0	6.1	9.8	12.3	8.9	14.6
5	12,698	1,703	18.0	12.3	8.3	8.7	6.8	5.7	14.4	11.3	7.5	13.4
6	13,382	1,893	15.0	14.4	8.0	7.8	7.0	8.2	14.0	12.0	7.8	14.1
7	13,561	2,210	12.0	11.1	6.0	0.0	5.6	7.0	20.4	12.7	10.4	16.4
Total	70,400	11,001	17.2	13.6	8.7	8.5	6.2	0.2	12.0	12.0	0.4	15.7
First 1,000 all Corps Areas			22.6	13.5	0.0	3.8	6.5	6.5	4.9	9.5	7.8	16.7
World War comparable period			7.3	14.7	4.6	10.9	13.7	0.4	4.1	10.0	16.7	11.6

ness in this Corps Area were requested to recommend the names of qualified specialists for the induction stations' medical examining boards. These Induction Stations are now located at the following places: Buffalo, Syracuse, Albany, Manhattan and Queens boroughs, N Y, and Newark and Trenton, N J.

The allotted strength of Medical Department personnel is that prescribed by MR 1-7. Originally it was considered that for an average of 200 men per day the medical examining board should consist of 12 officers and 18 enlisted men. This personnel was later increased by providing one neuropsychiatrist for each 50 inductees. In addition, representatives of the upstate New York Department of Health, New York City Department of Health, New Jersey state and local health services, and the State Department of Health in Delaware provided expert physicians to interpret x-rays of the chests of all selectees reporting at induction stations in the Second Corps Area. So, at the present time, the requirements for an induction station for 200 men are 16 medical officers, 1 dental officer, and 22 enlisted men or civilian employees.

The total number of registrants received at induction stations in the Second Corps Area as of March 31 was 76,406. Of this number, 64,398 were accepted and 11,991, or 15.7 per cent, have been rejected. The causes for rejection during each ten-day requisition period may be classified under nine main headings (Table 1).

Table 1 includes the causes for rejection under each heading for this Corps Area based on each requisition period, samples of approximately 1,000 men in the early period of examination in all Corps Areas, and, for comparative purposes, the last line indicates rejections in an early period during the World War.

A study of this table shows considerable variation in rejections within the Second Corps Area during the early and later re-

quisition periods in contrast with rejections during the World War. These figures should be interpreted as only showing a trend. Conclusive data will be unavailable until a complete analysis has been made by the Surgeon General of the Army.

Our experience in this Corps Area indicates there has been a drop in dental rejections from 27.6 per cent in the first period to 12.9 per cent in the last period. This is probably due to a better understanding of the dental requirements as processing continued. Dental rejections in the World War during the early stages were approximately 7 per cent. Rejections for defects of eyes, mental abnormality, and as a result of hernia have been consistent throughout and agree substantially with figures from the World War.

The average rejections for defects of the ear in this Corps Area are slightly less than 9 per cent, which is about double the percentage (4.6 per cent) for the early World War.

Rejections for heart defects are 6.2 per cent, which is less than half that of the comparable World War period.

Rejection for lung defects during the early part of the last war was 10.9 per cent, and so far in this Corps Area it has been 8.5 per cent or 2.4 less, notwithstanding the fact that all registrants are given an examination that includes an x-ray of the chest. Approximately 1 per cent are rejected because of x-ray findings. With the exception of the Second and Third Corps Areas, the rejection for lungs was low, the average for all Corps Areas being 3.8 per cent.

Musculo-skeletal and feet defects have averaged more than 9 per cent as compared with World War figures of nearly 17 per cent.

Venereal rejections in this Corps Area during the first requisition period were 5.4 per cent, while in the last requisition period in March it was 20.4 per cent. The increase in rate began in the fifth requisition period, when the percentage was 14.4, and reached

20.4 per cent in the seventh period the last week in March. It was in the fifth period that colored men were included among the selectees. This increase may be partly due to a change made in MR 1-9 and a delay in the information reaching examining physicians, or a misinterpretation of MR 1-9. During a similar period of the World War the venereal rejections were slightly over 4 per cent.

The average total rejections in this Corps Area, including the seventh requisition period ending March 31, were 15.7 per cent as compared with 16.7 per cent for a general average in all Corps Areas during the first requisition period and in contrast to 11.6 per cent in the early stages of the World War.

"The Prehabilitation of Registrants—a Plan for Rendering Registrants Fit for Examination and Service" has been offered by Selective Service Headquarters on page 1777 of the *Journal of the American Medical Association*, April 19, 1941, under the heading of "Medical Preparedness." It is suggested that every physician and dentist read this article.

"The plan provides that (1) registrants familiarize themselves with the physical standards required, (2) registrants apply to their local physicians and dentists if they fall short of the stipulated standards, (3) family physicians and dentists correct defects if they are remediable, and (4) registrants carry certificates of prehabilitation to local and induction boards at the time they present themselves for examination.

"The purposes of this plan are (1) to afford the registrant participation in his own prehabilitation, (2) to select more suitable men and increase the number of inductions, (3) to improve national morale by decreasing the number of rejections, (4) to cultivate in the registrants the spirit of self-reliance, initiative, and patriotism, and (5) to effect prehabilitation through maintaining the normal relationship of the patient to his family doctor and dentist."

### Medical Supply

As science and civilization progress the question of supply becomes more intricate. Cognizant of that fact, the War Department plan for medical supply preparedness has been going on since the last war. Planning for the mobilization of the medical resources of the country is one of the primary and fundamental functions of the Medical Department.

An Army's movement and its very existence can continue only so long as supplies and materials are adequate, and the quantities that

represent adequacy are almost beyond one's comprehension. The average layman thinks of medical supplies in terms of pills, hot water bottles, and the ordinary items found in drug stores. The fact is that the Medical Department buys, stores, and issues about 5,500 different articles, which range in variety from an upright steam boiler to carpet tacks. The Medical Supply Officer at the New York Depot tells me that at this time he is completing a program of assembling and shipping a total of 98 hospitals totaling 27,000 beds. These hospitals range in size from 25- to 1,000-bed capacity, and each bed represents approximately 600 pounds of auxiliary equipment.

Supplies for the Medical Department are vital. They are essential in the care of troops. When a recruit arrives at camp, he is clothed. Hence, if a uniform cannot be supplied immediately by the Quartermaster, the soldier will not die of exposure. If the Ordnance Department does not have guns, he must postpone shooting, if airplanes are not available, he cannot be taught to fly. The lack of these facilities does not produce individual hardship, epidemics and death. However, a recruit, upon arriving at camp, is subject to disease and injury, and it is imperative that the Medical Department have available appropriate equipment and supplies for his needs. We must always be prepared to meet any contingencies that affect the soldier's life or health.

Colonel Dawson, the officer in charge of the Medical Section of the New York General Depot, tells me that at the beginning of the present emergency the New York Medical Depot had approximately 550,000 square feet of floor space, spent an annual sum of around \$1,500,000, and shipped out about 500 tons of supplies per month. At present the floor space totals 1,400,000 square feet, expenditures since September 1, 1940, were \$32,000,000, and outgoing shipments exceed 3,500 tons per month, with incoming tonnage at least equaling this figure.

Time will not permit me to describe herein the many new items of equipment and supplies being made available for field use—such as blood plasma made from blood collected by the Red Cross and prepared by a manufacturer in units equivalent to a pint of blood, an anesthetic solution, already mixed ready for use in dental surgery, morphine in solution under nitrogen pressure for automatic use from container, individual ointment packets made out of soft gelatin capsules for

various prophylactic purposes, viz, venereal diseases, scabies, etc

### Professional

The Medical Department of the Army must furnish the highest standard of service for all military personnel. The cooperation of civilian agencies in meeting these requirements is of the greatest importance. For this purpose, early in 1940, the Surgeon General of the Army and Navy requested the Division of Medical Sciences of the National Research Council to establish committees that might act in an advisory capacity to the Medical Department. As a result, at the present time there are seven main committees functioning—namely (a) Committee on Chemotherapeutic and Other Agents, (b) Committee on Transfusion, (c) Committee on Medicine, (d) Committee on Surgery, (e) Committee on Aviation Medicine, (f) Committee on Neuropsychiatry, and (g) Committee on Information. In addition, there are at least forty subcommittees connected with these committees. All are concerned with some vital medical problem, and their findings are circulated to the appropriate medical personnel.

For example, the Committee on Chemotherapeutic and Other Agents, in compliance with a request from the Surgeon General, summarized the present status of chemotherapy with a view to its application in the treatment of military personnel. An outline of their opinions and recommendations concerning infections and infectious diseases was published in a circular letter by the Surgeon General as a general guide to medical officers so that this committee's findings could be used at their discretion with due consideration of all other factors that may be presented by each individual patient.

Aside from the care of the sick and injured, the Medical Department of the Army has always been concerned about the prevention of sickness and injury. It has been especially proud of its achievement in that role. I refer particularly to environmental sanitation, water supply, sewage disposal, antimalarial work, control of venereal diseases, and inspection of food and meat.

### Immunization Against Infectious Diseases in the United States Army

Selective Service registrants for our Army are critically inspected and tested. They must meet high standards physically, mentally, and morally. Those accepted are be-

lieved to be able to stand up under a year's strenuous military service and ten years in the Reserve Corps of the Army. The soldier is instructed in personal hygiene and is required to practice its principles. He is properly housed, provided a well-balanced diet, supplied adequate clothing, and is required to take supervised physical exercises. An efficient system of environmental sanitation gives him the best possible protection against communicable diseases. If he becomes sick or injured, he is given the best care possible in a modern hospital. In spite of all these measures a higher sick rate is always expected in recruits. This is especially true during the season when respiratory diseases are prevalent or in the field when men are not well disciplined.

Hemisphere defense necessitates the sending of our troops to varied climates where they are exposed to a great variety of diseases. The Medical Department of the Army has constantly been on the alert to perfect all plans to meet any contingencies that will affect the soldier's health. Military preventive medicine is one of the most important factors we can depend upon for accomplishing this task.

The accomplishment of prophylactic immunization against infectious diseases is particularly effective in Army troops. Army organization and administration make the carrying out of adopted immunization procedures a simple matter. Experience has shown that troops can be thoroughly immunized against smallpox, typhoid fever, and tetanus. Our Army has been effectively vaccinated against smallpox and typhoid fever for many years. During the World War tetanus antitoxin was used routinely as a prophylactic. As a result, there were only 36 cases of tetanus associated with 176,000 battle injuries. It has been reported that the French used toxoid immunization during the current war with no serious reactions and not a single case of tetanus. Active immunization against tetanus by vaccination with tetanus toxoid is being performed on military personnel when authorized by the War Department. Civilian employees subject to field service with the Army and others at military stations are privileged to take this vaccination. The first dose can be given concurrently with triple typhoid and smallpox vaccine. The Army is using liquid tetanus toxoid (plain), prepared according to specifications approved by the United States Public Health Service and the Surgeon General of the Army.

In addition to the above-mentioned vaccines, diphtheria toxoid or scarlet fever toxin may be used in localized outbreaks of diphtheria and scarlet fever among young recruits.

Our troops may be sent to localities where they have to be vaccinated against yellow fever, cholera, plague, and typhus fever. As a matter of fact, a vaccine that has been manufactured since 1936 by the Rockefeller International Health Board, consisting of an attenuated, living strain of yellow fever virus maintained by cultivation in the living chick embryo, is available for our troops that are sent to regions where yellow fever may occur.

Anticholera vaccines have been used for many years. The killed suspension of the *Vibrio* as used in Japan and India apparently affords protection. If our troops become exposed to epidemic cholera, a vaccine should be used. Plague, which has killed millions of individuals, at times has spread over the world. As late as 1923 it was estimated that there were 250,000 cases of plague distributed throughout the world. Endemic foci of rodent plague are known to exist in this country. This so-called "sylvatic" type of plague has been found in practically every state west of the Continental Divide. If our troops were exposed to epidemic plague, either the bubonic or pneumonic type, the use of a bacterial vaccine against the disease should be carefully considered.

Typhus fever is a wartime disease. The delousing of troops is a valuable control measure but does not give sufficient protection during an epidemic of the disease. Vaccines as a protective measure are believed effective as the result of animal experimentation, and arrangements have been made to manufacture it in large quantities should it be required.

The vaccine prepared by the International Health Board from strains of influenza and distemper viruses grown together in tissue culture is now being used for the prevention of influenza in man. This may become the greatest weapon for the control of this disease in the Army.

Since 1936 the Army has been interested in determining the prophylactic value of certain pneumococcal polysaccharide solutions against pneumonia. The results so far reported are encouraging. Specific agents are needed for the protection of troops in the field against such diseases as measles, mumps, meningitis, poliomyelitis, encephalitis, gas gangrene, malaria, relapsing fever, oryza fever, and the venereal infections.

## Morbidity and Mortality Statistics in the Second Corps Area

The average military strength in the Second Corps Area from September 21, 1940, to March 28, 1941, a period of 27 weeks, was 53,170. The following communicable diseases occurred: 14,988 cases of common respiratory disease, including influenza, 168, primary pneumonia, 9, epidemic meningitis, 149, measles, 188, scarlet fever, 912, German measles, 562, gonorrhea (508 of which were new), and 79, syphilis (21 of which were new).

During this period there were 49 deaths. Of this number, 25 were due to violence, viz., automobile accidents 15, gunshot wounds 3, airplane accidents 2, carbon monoxide poisoning 1, drug poisoning 1, burns 1, fractured skull 1, suicide by jumping from a high place 1. 9 deaths were due to cardiovascular renal disease, the remaining were from miscellaneous causes.

There were only 168 cases of primary pneumonia during this period when respiratory and acute communicable diseases were unusually high throughout the country. The fact that there was only 1 death among this group and no deaths among 9 cases of epidemic meningitis speaks well for modern chemotherapeutic measures. Credit should also be given to the constant vigilance maintained by the Medical Department personnel, which included daily inspections, observing all questionable sick patients at the unit infirmary, sending to the hospital all men with temperatures of more than 100 F and any others if in doubt about the appropriate disposition in each case, and careful medical care and nursing at the hospital. All these factors contribute to our low sick and death rate.

A few years ago there used to be reported about 500,000 cases of pneumonia of all forms in the United States each year, with approximately 100,000 deaths. The death rate then from pneumonia was exceeded only by heart disease and cancer. Further significance in this connection bearing on the use of the sulfonamide group of drugs can be appreciated by considering some of the last World War statistics. There were 2,370 deaths from measles, most of which were due to complicating streptococcal infections, 4,831 admissions for cerebrospinal meningitis with 1,836 deaths, 45,774 cases of lobar pneumonia with 10,145 deaths, a fatality of over 22 per cent. The total man-days lost to the Army from gonorrhea in the World War were 3,903,303. Based on recent tables where the results of various

chemotherapeutic agents are carefully reported, checked, and analyzed, it appears that more than 65 per cent of gonorrhea cases are symptom-free within one week under sulfathiazole treatment

### Extra Cantonment Sanitation

During the past year it was my privilege to observe the splendid coordination of effort and cooperation given the Army Surgeon by the United States Public Health Service and the New York State Health organization representatives not only in the planning stage of the First Army Maneuvers but while the maneuvers were in progress. It is properly recognized that reciprocity in this matter is equally important for the health of the Army and the civilians in the community concerned.

The above-mentioned agencies are using their resources in safeguarding the health of military personnel by suitable measures of extra cantonment military sanitation in the vicinity of maneuver areas and of Regular Army stations.

The control of venereal diseases continues to be one of the more important health problems for both the military and civilian authorities. The War Department, recognizing the seriousness of the venereal disease menace, sent a letter to the commanding generals of all corps areas and departments, citing the joint agreement between representatives of the Surgeon Generals of the Army, Navy and United States Public Health Service, with a view to initiation of measures for the purpose of reducing the spread of venereal diseases. The American Social Hygiene Association, together with many other voluntary agencies, is rendering a great service to this country under the provisions of the agreement referred to. This joint agreement was as follows:

It is recognized that the following services should be developed by state and local health and police authorities in cooperation with the Medical Corps of the United States Army, the Bureau of Medicine and Surgery of the United States Navy, the United States Public Health Service and interested voluntary organizations:

(1) Early diagnosis and adequate treatment by the Army and the Navy of enlisted personnel infected with the venereal diseases.

(2) Early diagnosis and treatment of the civilian population by the local health department.

(3) When authentic information can be obtained as to the probable source of extramarital venereal disease infection of military or naval personnel, the facts will be reported by medical officers of the Army or Navy to the state

or local health authorities as may be required. If additional authoritative information is available as to extramarital contacts with diseased military or naval personnel during the communicable stage, this should also be reported.

(4) All contacts of enlisted men with infected civilians to be reported to the medical officers in charge of the Army and Navy by the local or state health authorities.

(5) Recalcitrant infected persons with communicable syphilis or gonorrhea to be forcibly isolated during the period of communicability, in civilian populations it is the duty of the local health authorities to obtain the assistance of the local police authorities in enforcing such isolation.

(6) Decrease as far as possible the opportunities for contacts with infected persons. The local police department is responsible for the repression of commercialized and clandestine prostitution. The local health departments, the State Health Department, the Public Health Service, the Army, and Navy will cooperate with the local police authorities in repressing prostitution.

(7) An aggressive program of education both among enlisted personnel and the civilian population regarding the dangers of the venereal diseases, the methods for preventing these infections, and the steps that should be taken if a person suspects that he is infected.

(8) The local police and health authorities, the State Department of Health, the Public Health Service, the Army, and the Navy desire the assistance of representatives of the American Social Hygiene Association or affiliated social hygiene societies or other voluntary welfare organizations or groups in developing and stimulating public support for the above measures.

General Reynolds, in his presidential address on "Our Medical Preparedness for Modern War," before the Association of Military Surgeons of the United States at Cleveland, Ohio, in the fall of 1940, stated: "Prostitution must be recognized as a Fifth Column in our midst to be dealt with accordingly. Without restraint the forces of prostitution can decimate a military command. These forces strike the moment mobilization and concentration begin and hang on the flanks of the forces as they move from one theater of operations to another. Modern ways of life have changed the tactics of prostitution to keep it current with the changes of the methods of war. As Colonel Dunham puts it 'Prostitution has been motorized while the Army has become mechanized.' The operations of a mechanized force cover a wide territory, calling for a more universal cooperation by local health and police officers with military commanders."

### Conclusion

Time will not permit even a mention of many phases of our tremendous task, in-

cluding those pertaining to administration, planning, training, tactical field problems, and the recent advances made in war medicine and surgery. While there are many unsolved medical problems that are a challenge to the medical profession, the outlook for the welfare of every soldier participating in the present National Emergency is better than ever before. There still remains, however, an opportunity for patriotic service of vital importance in the interest of National Defense by the members of our profession.

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## COMMUNITY HEALTH IN AREAS ADJACENT TO MILITARY POSTS AND IN DEFENSE INDUSTRIES

ALBERT E. RUSSELL, M. D., F. A. C. P., Governors Island, New York

THE present program for national defense has focused our attention on the many problems of public health and physical fitness. More than ever before the nation has recognized health as an essential element of preparedness. This is attested to by the phrase "maintenance of public health, safety, or interest" which is used repeatedly throughout the Selective Training and Service Act of 1940. Surgeon General Thomas Parran, in an address before the State and Territorial Health Officers in Washington, D. C., on September 16, 1940, said in part "The most impelling problem which we face today is that of maintaining the safety of this country and its institutions. For their aggressive defense, we are gearing up governmental methods, mobilizing resources, and manpower."

"For the first time in all history, world events have thrust upon us the concept of a total war. In preparing for a total defense, all factors ultimately rest upon the one fundamental resource of the country, *manpower*. Medicine and public health, through the centuries, have been devoted to the conservation of manpower and its socially constructive use."

The Federal Government has planned a closer coordination of health activities to pro-

mote national defense than we have known before. We have now a coordination of civilian health problems with social welfare, children's problems, nutrition, and other consumer interests under one of seven members of the Advisory Commission of the Council of National Defense.

### Health of the Workers

Industrial mobilization and expansion coincide with military mobilization and expansion. Although we have made progress, we are still far from solving all the long-time problems associated with occupational disease, accidents, and physical impairment among workers in ordinary times. The importance of industrial production in the United States has never been so great as it is today. It is the prime factor that will decide our future as a Democracy as well as that of our neighbor nations. It behooves us, therefore, to give serious thought and concise action in the matters of health of the men and women in our industries today.

The great and rapid industrial expansion has brought new and hazardous processes in addition to an augmentation of the old ones already known to us. Federal, state, and local health departments are taking steps to meet the present-day needs. The knowledge of industrial medicine and safety must now be applied vigorously, and careful watch for new hazards must be made. More than thirty state industrial hygiene units have been es-

Read by invitation by Roger E. Heering, M. D., M. P. H., Passed Assistant Surgeon, United States Public Health Service, at the Annual Meeting of the Medical Society of the State of New York, Buffalo, April 30, 1941.  
Senior Surgeon, United States Public Health Service, Liaison Officer, Army Second Corps Area, Fort Jay.

established during the past five years, almost entirely with Federal funds from Title VI of the Social Security Act. These consist of an organization nucleus that is not entirely adequate to meet the present crisis. These units have their problems, and chief among these are lack of sufficient numbers of personnel with proper training for their jobs. Back of this, in many instances, is the lack of funds to employ trained personnel and to offer them security in their positions. The newness of industrial hygiene work in state health departments is perhaps the reason why funds have not been provided by the legislatures of the respective states. These units have not had sufficient time to prove their worth and thereby make it easier to obtain necessary funds. Now these units are called upon to function to the fullest extent of their abilities. The Federal Government is giving further help by providing funds and by assigning personnel to assist in this vital program.

Another problem in connection with the health of workers in defense industries is the shortage of physicians who are trained for industrial medical service. These men are important to industry, for they are the ones who must take care of the injured. They see those workers who are ill with infectious diseases, refer them to their own physicians, and notify the health officer. Early recognition and isolation are important. The industrial physician is first to recognize occupational diseases, and it is his duty to notify the industrial hygiene unit of the State Health Department. To meet the shortage of this important group of physicians it is necessary to coordinate postgraduate training with the medical societies, medical schools, and health departments. Industrial medicine is one of the newest specialties—therefore the shortage of physicians in this important field.

### Health in Local Communities

The health in local communities is of great importance in national preparedness. This importance has a special emphasis in those communities where defense industries are located and also in those adjacent to military posts. For almost every worker there is attached a family, the health and welfare of which are the responsibility of the local, state, and federal health authorities. Workers must be treated as a part of the social structure, the basis of which is the family, and any health program that is aimed at him must include not only those with whom he works but also those with whom he lives and plays

We all agree that we are interested in preserving the health of the worker if only for the sake of his usefulness in our national scheme of defense activities. However, we cannot isolate the worker from his immediate associates, we cannot overlook the necessity of making him aware of his responsibility in the effort to prevent and check the spread of infectious diseases in his immediate environs.

In this connection we must also consider the problem of housing of workers and their families. There are always great health and social problems brought about by large population shifts. The lack of adequate housing complicates and intensifies these problems. The great expansion of industries and also mobilization of troops have brought to us many of these situations.

There exists a shortage of skilled workers throughout the defense industries. Increased production has resulted in placing a greater burden on the physical capacities of the individual skilled worker. Since this situation exists, it becomes imperative that health hazards be reduced to a minimum. It is not possible to concentrate the problem of control of communicable disease on industrial groups to the exclusion of the surrounding communities. The workers are already grouped together by the very nature of their occupations and are, consequently, more easily reached than the bulk of our civil population. Health education carried to industrial communities will have far-reaching effects. This is particularly true in the case of venereal diseases. The burden of organized activity to maintain the health in industrial and military areas must be shared equally by local official agencies, municipal administration, and employers.

### Special Health Problems

Large population shifts may introduce a diversity of special health problems. Many of these seem rather remote on casual examination, however, when considered in their fullness they take on a different perspective. One of these is malaria. There are many places where mosquitoes are prevalent which are capable of transmitting this disease. Workers migrating from sections where malaria is prevalent may well serve as a reservoir of infection. Also, troops returning from the Canal Zone and other tropical areas may also become sources of infection. There was a recent outbreak in a neighboring state resulting in 110 cases of malaria traceable to a boy who had been in a CCC camp in the South.

Therefore, it is easy to see the necessity for efforts to control mosquito breeding

### **Water and Sewage Facilities**

The rapid and extensive increase in population of small towns and villages has, in many instances, overtaxed the water and sewage facilities. Frequently, the local government has not been able to effect an augmentation of these services to meet the needs. In some situations it may appear wasteful to spend large sums to provide services that may be in demand only temporarily. However, surveys reveal that in many communities water and sewage disposal facilities are already operating at more than efficient capacity. Thus, the present emergency provides an impetus for the expansion of facilities for which the need has been existent for some time. In any event, we cannot afford halfway measures when the health and welfare of workers vital to the national defense are at stake. That the Federal Government takes this position is evidenced by the fact that, where necessary, local funds will be augmented by Federal aid.

### **Milk and Other Food Supplies**

The transmission of disease through milk and other foods is not new to us. The increased demands for milk should be accompanied by increased vigilance. Universal pasteurization must be practiced to provide safety in this regard.

It might be well to mention here that the Public Health Service, Federal Security Agency, and the Bureau of Dairy Industry, United States Department of Agriculture, have approved and recommended for adoption by states and communities a milk ordinance and code to encourage a greater uniformity of milk control practice in the United States.

This ordinance and code embodies the best information at present available on milk control legislation, but it should be subject to change as improvements are developed.

The source and handling of other food supplies must have adequate supervision. Fortunately, much has been accomplished in this field already, however, vigilance must be maintained.

### **Medical and Hospital Service**

The rapid growth of small villages into boom towns has brought about need for adequate medical and hospital services. In some of these communities no hospitals exist. Hospital service cannot be provided on short notice.

It is also costly to provide and maintain. Coordination of hospital and medical facilities must be made, and transportation units of ambulances must be organized to meet the local needs.

There is also a shortage of nurses and laboratory technicians. Intensive courses would provide more technicians. Nurses' courses are necessarily longer. Here again, coordination of available talent with the needs is extremely necessary.

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The military authorities have facilities for education and extension of activities in this field, however, the sources of infection of troops are outside the military posts and, therefore, beyond the control of military authorities. This places the burden of venereal disease control squarely on our shoulders. It is a great responsibility and one in which all must participate. The health officer must assume the leadership and have the support of local physicians and the law enforcement agencies. We are not concerned with the prevention of infection only in troops but also in the skilled and unskilled workers who are so vitally important in our scheme of national defense. Therefore, venereal disease control must be a vital part of the general health program.

Every state now furnishes a free laboratory diagnostic service to all physicians. Expensive drugs for the treatment of patients are available to all doctors. In 2,887 clinics competent diagnostic and treatment service is available, in most of them, epidemiologic investigations are made to seek out the sources of infection and bring them under treatment. The private physician can render valuable service in the control of venereal disease by promptly reporting the infectious cases and, if necessary, asking for their quarantine. This will save many lost working days to our vital industries by preventing the spread of these diseases.

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civilian population is equally as important as that of the armed forces

The underlying principles of public health and of medical service are no different today than yesterday. The challenge lies in our ability to apply our knowledge and technics so as to satisfy the problems of medical defense and produce the optimal effect. In accomplishing this purpose careful thought must be given to a readjustment of activities, particularly changes in emphasis, the adaptation of known principles to new problems, and above all the determination to act once the needs have become clear. Those of us well grounded in medicine and the specialty of public health need have no qualms as to our ability to meet this challenge.

In the previous World War, as in the present state of armed defense, health department personnel is responsible for protecting the health of the civilian population and also that of the armed forces, except when the latter are on military reservations. Today we are rediscovering some of the medical defense problems of the previous world conflict. An article written following the World War Armistice, discussing the war activities of the United States Public Health Service,<sup>2</sup> is most illuminating. Some of the activities listed in this report have already been reassumed in modified form by the federal service in dealing with present emergencies, others will likely be reassumed in the near future. However, public health administration and facilities have shown marked improvement since 1917, largely through employment of Social Security funds. State and local health organizations have been reorganized, their staffs increased with trained personnel, health programs perfected and broadened, the number of safe water supplies increased, and the use of pasteurized milk popularized. Of particular importance has been the inauguration of effective venereal disease control programs, a matter largely one of wishful thinking at the outbreak of the previous conflict. These advances will make it possible, at least in New York State, for state and local health departments acting together to provide a much more satisfactory health program throughout the state, inclusive of areas where concentrations of troops or of workers in defense industries occur, than was possible during the previous war. However, additional personnel or the curtailment of existing essential functions will be necessary if services beyond those now given are required for any extended period of time as a result of defense activities. Existing services

will likewise be hampered if health department staffs become reduced in satisfying the needs for personnel by the armed forces.

The problem of providing public health protection within the limit of available facilities for new arrivals in large numbers in a relatively small area over a short period of time is not a new problem in upstate New York. Annually, nearly 1,500,000 people spend from one week to two months in summer residence at camps, summer hotels, and boardinghouses in the counties of Sullivan, Rockland, Orange, and Ulster alone. Public health problems connected therewith are, however, of a somewhat different order than those arising from troop concentrations. An occasion of the latter type was experienced during August, 1940, when approximately 90,000 regular army and National Guard members gathered in the region of St. Lawrence County to participate in field training and maneuver activities. Prior to and during the maneuvers, special emphasis was placed on venereal disease control efforts and environmental sanitation in the area adjacent to the maneuvers and also at points of overnight bivouac of troops passing to and from the area. A feature of the sanitation work was the inspection of all types of food-handling establishments in an effort to discover health hazards and obtain correction of such defects.

The communicable disease incidence in the civilian population during the army maneuver period was within normal limits. No outbreaks were reported. Among the troops, two outbreaks of gastroenteritis were reported, involving approximately a total of 180 men. The cause of the first outbreak was probably a preformed staphylococcus toxin in a batch of sandwiches. These were prepared at a bivouac point, transported in the rear of a car all day, and eaten by the men on their arrival at camp. The second outbreak was of bacillary dysentery and was limited largely to a single infantry regiment. It was believed to be water-borne from use of an unauthorized well in the vicinity of their camp.

The venereal disease incidence among the troops was low. During August a total of 53 cases of gonorrhea and 3 cases of syphilis were reported, a total rate of 6.2 cases per 10,000. Of these, only 12 cases of gonorrhea and no cases of syphilis were indicated to have had their origin within the maneuver area. Thirty-nine of those found to be infected stated that exposure took place prior to leaving home or en route, the remaining 5 gave indefinite information. Unfortunately, no information

been demonstrated that it is virtually impossible to control this problem by police and medical surveillance. The local law enforcement authorities can and must eliminate it with the cooperation of the health authorities in finding and suppressing sources of danger.

### Prophylaxis in Venereal Diseases

The prevention of infection is an important factor in the control of any disease and especially in venereal diseases when we consider the seriousness of them. An educational program will do much in this particular field, it should be well organized and carried out effectively. Every health educational program should include information on venereal diseases: what they are, how contracted, how prevented, and how cured.

In the matter of chemical and mechanical prevention of syphilis and gonorrhea, the American Social Hygiene Association and the United States Public Health Service appointed a special joint committee to study and report on this phase of prevention. This committee made recommendations that were published in several medical journals and are now avail-

able. The procedure recommended is essentially the one that is employed by the military forces and has, no doubt, been responsible for the low rate of infection in troops. The committee recommended chemical and mechanical prophylaxis as necessary to decrease the number of carriers of infection and, hence, is complementary to educational measures.

### Conclusion

The present crisis with which we are faced and the resultant need for industrial and military mobilization have not necessarily injected any entirely new problems into the scheme for healthy living but, rather, have intensified the need for the control of old problems which the present situation has amplified. Therefore, it is the job of state and local health departments, with the cooperation and, if necessary, financial assistance of the Federal Government, to augment existing facilities or organize new ones for the maintenance of necessary standards of health and sanitation, particularly in those areas adjacent to the locations of our industrial and military forces.

## FROM THE VIEWPOINT OF THE STATE HEALTH DEPARTMENT

V A VAN VOLKENBURGH, M D, Dr P H, Albany, New York

**I**N ACCEPTING the challenge to defend the ideology of democracy, more than defensive efforts will be required. Each week brings closer the realization that if we are to defend democracy successfully we must assume the offensive and fight to preserve it with every means at our disposal whatever the sacrifice. Self-interest, jealousy, greed, and hate must be subjugated to the common welfare. These forces not only breed wars of conquest but are the chief allies of those wishing to cause dissolution in the countries they desire to control. Unity of thought, of purpose, and of action, with the single goal of preservation of the democratic way of life, will be necessary to cope successfully with the problems ahead of us.

Much has been written and a great deal said regarding health and medical preparedness in national defense activities. Outstanding is an address by Surgeon General Thomas Parran<sup>1</sup> in which the needs are clearly foreseen and

defined. It is worthy of thoughtful and repeated perusal by every worker active in the practice of medicine and public health. From sources such as this, it is encouraging to note that all agree as to the need for "total defense" in combating "total war" and that all recognize the necessity of securing for every member of our population the highest possible level of physical and mental health.

Mechanized warfare demands an ever increasing production of war material. Battles may be won or lost in our factories rather than in the field. It is disconcerting to learn that time lost during the last year due to industrial accidents and disability has been estimated as enough to build fifty-two superdreadnaughts of the class of the North Carolina, according to J J Bloomfield of the United States Public Health Service. Civilian defense forces operating on the home front have been found as necessary a part of defense as front-line troops. It is well recognized that disease is indifferent to boundary lines marking off military zones. From facts such as these has come the realization that the health and physical fitness of the

<sup>1</sup>Read at the Annual Meeting of the Medical Society of the State of New York, Buffalo, April 30, 1941.  
Assistant Commissioner, Local Health Administration,  
New York State Department of Health.

civilian population is equally as important as that of the armed forces

The underlying principles of public health and of medical service are no different today than yesterday. The challenge lies in our ability to apply our knowledge and technique so as to satisfy the problems of medical defense and produce the optimal effect. In accomplishing this purpose careful thought must be given to a readjustment of activities, particularly changes in emphasis, the adaptation of known principles to new problems, and above all the determination to act once the needs have become clear. Those of us well grounded in medicine and the specialty of public health need have no qualms as to our ability to meet this challenge.

In the previous World War, as in the present state of armed defense, health department personnel is responsible for protecting the health of the civilian population and also that of the armed forces, except when the latter are on military reservations. Today we are rediscovering some of the medical defense problems of the previous world conflict. An article written following the World War Armistice, discussing the war activities of the United States Public Health Service,<sup>2</sup> is most illuminating. Some of the activities listed in this report have already been reassumed in modified form by the federal service in dealing with present emergencies, others will likely be reassumed in the near future. However, public health administration and facilities have shown marked improvement since 1917, largely through employment of Social Security funds. State and local health organizations have been reorganized, their staffs increased with trained personnel, health programs perfected and broadened, the number of safe water supplies increased, and the use of pasteurized milk popularized. Of particular importance has been the inauguration of effective venereal disease control programs, a matter largely one of wishful thinking at the outbreak of the previous conflict. These advances will make it possible, at least in New York State, for state and local health departments acting together to provide a much more satisfactory health program throughout the state, inclusive of areas where concentrations of troops or of workers in defense industries occur, than was possible during the previous war. However, additional personnel or the curtailment of existing essential functions will be necessary if services beyond those now given are required for any extended period of time as a result of defense activities. Existing services

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was obtainable as to the number of cases occurring after the return of the men to their homes in this and other states. Nonetheless, it is believed that an epidemic of gonorrhea would have shown itself during the maneuver period had such occurred, since the incubation period of the disease is so short. With syphilis, however, evidence of widespread infection would not have come to light until after the maneuvers were over.

The above is cited as a relatively simple example of the excellent results obtainable by well-organized health services in an emergency situation. There was no mention, however, of the careful thought given to formulation of plans to meet the situation or of the effort spent in coordinating the services of the army and the various state and local official and nonofficial groups assisting in bringing about these results. This phase of the work is emphasized since, in planning for medical defense, success or failure will largely depend on our ability to coordinate satisfactorily the work of the many groups and individuals engaged in health and allied activities.

In New York State steps have already been taken to provide permanent official coordinating agencies. As you know, Governor Lehman appointed Lieutenant-Governor Poletti as State Coordinator for National Defense in organizing the New York State Defense Council. This agency is closely associated with the National Defense Council at Washington and its various functional coordinators. The federal coordinator for health, welfare, and recreation is Paul V. McNutt.

Almost a year ago Mr. Poletti requested that an existing state commission known as the New York State Temporary Legislative Commission to Formulate a Long Range Health Program assist the State Defense Council by assembling and analyzing data relative to the health resources of the state.<sup>2</sup> The Commission thereupon appointed a subcommittee for health preparedness as an advisory agency. Members of the subcommittee include representatives of state organizations of physicians, hospitals, dentists, optometrists, pharmacists, nurses, such nonofficial agencies as the Red Cross and State Charities Aid, and representatives from the State Departments of Health, Welfare, and Education. The Commission, in bringing these representatives together, not only provided itself with sources of authoritative information and advice but placed itself in the position of being able to assist in coordinating the health preparedness activities of the various health agencies organized on a

state basis. Its function, thus far, has been chiefly that of surveying health resources. Under present arrangements, state departments responsible for health programs, the Commission, and possibly nonofficial medical and health agencies report each month to Mr. Poletti on their activities and present to him their recommendations.

One of the suggestions of the Commission was the desirability of forming official health advisory committees organized on a county basis, the suggested membership to include the chairman of the board of supervisors or the county executive, the chairman of the medical preparedness committee of the county medical society, the county welfare commissioner and county representatives of the local hospitals, the district and local health departments, the dental society, the nurse association, the pharmaceutical society, and the American Red Cross. The suggestion was approved by Mr. Poletti and, according to a recent report, the City of New York and fifty-four counties out of a total of fifty-seven in the entire state now have advisory health preparedness committees which, it is hoped, will function effectively. In most instances, each county committee is directly represented on the County Defense Council by the chairman of the medical preparedness committee of the county medical society. Each county committee is also closely linked to the State Health Commission which, as has been shown, is one of the health advisors of the State Coordinator for National Defense. The functions and duties of the county health advisory committees have been defined<sup>3</sup> to include the coordination of health preparedness activities of the various health groups within the county, the assembly of health resource data, the making of recommendations to the County Defense Council (including advice as to individuals of selective service age whose services are considered essential to insure civilian health protection), the filing of reports of meetings with the State Health Commission, the reporting of local health needs to the Commission, and, finally, the general promotion of health preparedness within the county.

From the foregoing it would appear that from the standpoint of organization the state is in a position to coordinate satisfactorily the work of its many health agencies not only with each other but also with the broader and more complex activities of county, state, and federal national defense. It should also be noted that in servicing coordinating efforts it is necessary that the various health agencies maintain

a high order of efficiency and character of work and, in addition, make provision for the rapid shifting of personnel and equipment for the handling of emergencies. In respect to the latter, the State Health Department fortunately is so organized as to lend itself readily to handle emergencies. With its twenty branch offices, each strategically located in the state and each staffed with medical public health officers, sanitary engineers, nurses, milk sanitarians, inspectors, and clerical force, it is possible for the personnel not only to keep in close touch with local situations in their district in carrying out their regular assignment of supervising and assisting local official health agencies but also to serve as a reservoir of trained personnel, making possible overnight assemblage in one or more threatened districts. Similarly, assistance is available from the central office of the department in supplying experts in the various specialties of public health.

In dealing with problems of medical defense, too much dependence on old-fashioned ways of doing things should be avoided if success is to be attained in preventing and controlling the spread of disease. As suggested by Homer Folks,<sup>4</sup> today's problems require of everyone resourcefulness, adaptability, and quickness in discerning and measuring impending changes, new needs, and new situations. While the disease conditions to be encountered will likely be much the same as in the previous war, changes in the environment, in the habits of living, and in the character and conduct of war have been extensive and must be carefully considered in planning for the use of control measures.

Inexpensive, readily available, and rapid means of transportation will be a factor to keep in mind. It has already complicated venereal disease control efforts. The prostitute, owning an automobile or, in many instances, a trailer, is able to change the scene of her operations almost nightly making it difficult to be located in follow-up investigations. More commonly, the average soldier on a free evening is prone to join his mates, hire a car, and within the hour be at a rendezvous some 30 to 40 miles away. These practices nullify to a great extent the value of establishing closely policed extra cantonment zones in the immediate vicinity of camps, a practice of some value in controlling the spread of venereal disease during the previous war. Present efforts would appear to be more profitably spent in studying the habits of the soldiers, observing where they congregate, and

instituting adequate control measures at such centers.

Prophylaxis stations, extensively used by soldiers during the previous conflict, had few patrons during last summer's upstate army maneuvers. This may have been due to an increased use of condoms and sanitubes. These devices were purchasable at a low price at most of the canteens and post exchanges within the area. It is important to note, however, that there is no longer an army regulation requiring a soldier to report for prophylactic treatment following exposure. Penalties are imposed only if the soldier fails to report for treatment for venereal or suspected venereal disease.

The widespread use of the automobile has its compensations. It is likely that the incidence of the so-called "childhood" diseases will be materially lower among the rural selectees in army camps when compared with the situation twenty-four years ago, since the almost universal use of the automobile has greatly diminished the isolation of rural dwellers resulting in fewer nonimmune soldiers. The automobile has also been a factor in relieving housing shortages caused by defense industry activity and has thus prevented what might well have been serious overcrowding with resultant communicable disease hazards in some communities. It should be stated, however, that automobile accidents have increased materially from the practice of living within a radius of 15 to 60 miles distant from the place of employment. In some instances it has also caused a severe strain on the sanitary facilities of small villages.

The acquisition of military bases in South American waters and the exchange of military and economic missions in furthering the hemisphere defense program presages increased interchange of populations. As a result, danger from tropical diseases may be materially increased in the days to come. It should be remembered that yellow fever continues to be a constant threat to the southern half of the United States. Epidemics of the disease have occurred in the past in the cities along the North Atlantic seaboard. With the skyways soon to be crowded with airplanes, present mosquito control measures used on planes from South America may break down under the stress of defense emergencies.

The control of malaria within the borders of North America is of even greater importance. In New York State new cases of malaria are reported each year. However, the number of such cases have been few in recent years.

Extensive mosquito control projects have been in effect on Long Island for some time

The possibility of sabotage and bombing reflecting the "all-out" technics of present-day warfare demand action on the part of municipalities long in advance of such possible occurrences if the population is to be kept free from communicable diseases transmitted by milk and water. Damage to electric power lines may stop the operation of many pasteurizing plants leaving only raw milk available. Power failure is similarly disastrous to water treatment and purification plants but is only one of many factors that might disturb continuity of service and the maintenance of a safe water supply. It is possible to circumvent many of these factors. Water and sewage treatment plant officials in the state have been advised of the more important precautions to be taken. Desirable procedures are authoritatively discussed by Harry E Jordan<sup>6</sup> in a recent publication.

Advance preparation for medical care is similarly necessary in coping with disaster. Some cities have already established catastrophe units operating from city hospital bases, have designated certain buildings as local collecting centers for the injured, determined the part each hospital will assume in carrying out the project for the city at large, and have made plans for reception area hospitals to receive evacuees able to be moved from centrally located hospitals. In times of emergency, however, the success of such plans will depend on how closely they are coordinated with the broader plan of city emergency defense, which includes the management of transportation and communication, law enforcement, fire extinguishing, and maintenance of utility services.

Cities likely to be bombed should plan for the evacuation of a large portion of their population. A survey of the available facilities in areas adjacent to these cities should be made, including housing, hospital, and laboratory facilities. In the counties bordering on New York City, a study should be conducted as to the improvements necessary to make summer quarters habitable the entire year. Commencing a year ago, the State Department of Health intensified its efforts in these counties to insure adequate sanitary facilities for camps, summer hotels, and boardinghouses. In the Catskill region alone there are nearly 5,000 hotels and boardinghouses and 360 camps not served by public water supply and sewerage systems.

Compared with twenty-four years ago,

there is much to be thankful for in contemplating today's medical defense problems. Significant strides have been made in chemotherapy, in serum therapy, in the collection and preservation of blood, and in the development of immunizing agents. Such diverse conditions as pneumonia, gonorrhea, meningitis, shock, yellow fever, and tetanus would appear to have lost much of their previous threat. According to a recent report,<sup>6</sup> sulfadiazine, one of the new experimental drugs, gives promise of swiftly banishing the meningococcus from the nose and throat of not only meningitis cases but also healthy carriers of the organism. There is some hope that the combined vaccine developed by Dr. Frank Horsfall, Jr., of the Rockefeller Institute for Medical Research may be useful in preventing influenza virus A infections. Recent advances in the newer knowledge of nutrition have been extensive and are about to be popularized over the state through publicity by the newly organized county nutrition committees.

Of great significance is the cooperative attitude shown by the physicians and authorities of this state in putting into effect the requirement that each selectee be given a serologic test for syphilis and that each selectee appearing before the army induction board be x-rayed for chest pathology. Data are now available from the examination of 87,206 serologic specimens obtained from upstate men at the time of physical examination. Sixteen out of every 1,000 specimens were found to show some degree of positivity by the state and local approved laboratories participating in the testing. Excluding the cities of New York, Albany, Buffalo, Rochester, and Syracuse, 985 positive serologic tests were reported. Of these, physicians reported 571 as cases of syphilis. The status of the remainder is pending. Fifty per cent of the 571 cases were reported to the department prior to the selective service test. Only 11 per cent of the total cases were classified as early syphilis. Of the 21,708 men x-rayed at the three upstate induction centers, a duty now taken over by the army authorities, 157 were found to have tuberculosis, a case yield of 0.7 per cent. Of the total cases, 32.5 per cent were classified as moderately or far advanced cases. Needless to say, efforts by health departments include the investigation of each newly discovered case of infectious syphilis and tuberculosis in an effort to determine source and contact cases, as well as making sure the patient obtains and continues under adequate treatment.

The problem of rehabilitating selectees ex-

amined and deferred because of minor physical defects, easily remediable, is at the moment a moot one. Col Samuel J Kopetzky, chief of the medical division of the New York City Selective Service, reporting on the results from the first six months of New York City Selective Service examinations, states that 24.85 per cent of those examined were placed in the deferred class, although it would be possible with little effort or expense to make them physically fit for full military duty. Dr Kopetzky believes that the army should do the job. A plan offered by the Selective Service Headquarters in Washington proposes "prehabilitation," leaving it to the initiative of the registrant to find out if he meets the army requirements before coming up for physical examination and to see that discovered defects are immediately corrected. Without doubt, some satisfactory plan will soon be placed in effect to insure that every deferred selectee with remediable defects will obtain the necessary corrections regardless of economic status. It would appear that a time-worn public

health objective suggesting an annual physical examination with correction of defects is about to bear fruit, at least within a certain segment of the population.

In closing, previous remarks are reiterated for emphasis. The problems of today require of everyone resourcefulness, adaptability, and quickness in discerning and measuring impending changes, new needs, and new situations. Much depends upon our ability to apply our knowledge and techniques to these new needs and to act once the needs become clear. The objective is to secure for every member of our population the highest level of physical and mental health.

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## THE PART OF THE CIVILIAN PHYSICIAN IN THE DEFENSE PROGRAM

JOHN D. NAPLES, M. D., Buffalo, New York

AT PRESENT, there are approximately 190 physicians in Erie County examining selective service registrants. Most of these men are examined in the civilian physicians' own offices. Furthermore, they are examined on the doctors' own time. One fact is worth mentioning at this time and that is that the doctors are not paid a single penny for this work. They have willingly accepted the task as part of their moral responsibility in the defense program. Sometimes these doctors are even subjected to severe criticism by some of the laity.

There are two hospitals in the City of Buffalo where these examinations are made by a group of six doctors in teamwork fashion. Here, it is decidedly easier, because each physician performs just one part of the examination instead of the entire one. For example, one doctor examines the eyes, another the nose and throat, another the chest, etc.

The examinations rendered are, of necessity, strict. It has been shown that during the

World War 1,200,000 men had to be examined in order to get the necessary first 800,000 for induction. It is estimated that these same figures will hold good at the present time. Statistics in the New York area show that approximately 49.5 per cent have been rejected. The figures in this area have been about the same. The records in one of the hospitals here where the examining of these applicants is done show a rejection, at times, of as high as 54 per cent. Furthermore, after these men have been examined by the civilian physicians, they are sent for final check-up by the physicians at the induction centers. In this Buffalo area our experience has been that further rejections have been made. Statistics show that the percentage of further rejections at the induction centers have ranged from 11.6 to 17 per cent. This, of course, would bring the percentage of rejections a bit higher. In the World War, 40 per cent of those examined throughout the entire New York State were rejected. This year even though this rate is higher, around 49.5 per cent, I believe that it compares favorably and shows that the health of the community is as good as it

was during the World War. The reason for the higher percentage of rejections at present, of course, is due to the fact that the examinations are stricter. For example, today, Wassermann tests and x-rays of the chest are taken on every selectee. This was not done at the time of the last war. Of course, it is obvious that the physician is rendering a real service by applying these special tests. Many cases of tuberculosis and syphilis which otherwise would not come to the doctor's attention have been discovered. Those who are found to be afflicted are, in every instance, referred to their family doctor. In this way the physician in civil life can now render adequate treatment in these newly discovered cases.

A serious question therefore arises as a result of these rejections. What are we to do with these men? It seems to me that there is a twofold duty.

(1) To correct these defects and thereby better prepare these men for future induction, if necessary.

(2) To correct these defects so as to render the men better able to work in defense industry.

As mentioned above, the men who have been turned down are, in every instance, referred to their family doctor. Herein lies an important obligation of physician to his patients. A good many of these defects are due to eyes and teeth—as high as 14 per cent or more in each instance. These conditions may be quite readily remedied. Hernias, defects of the skin, nose and throat, and extremities, and venereal diseases could be most readily corrected.

If these defects are corrected, then there is no reason why the selectee should not be ready for military duty in the near future. If they are not corrected, then the men having these defects can enter into some profitable industry associated with the national defense program.

The physician who remains at home must, of course, keep up the physical condition and health of the civilian population and the morale of the people. This morale depends much on the physical fitness and health of the people. These are all-important factors in defense.

Let us consider Erie County. At present

in the county society, there are 808 doctors in general practice. According to the population there would be about 1,000 persons to each physician in general practice. There are 205 specialists. Here the ratio would be about 4,000 people to each specialist. If the ranks of the physicians are seriously depleted because of induction in the Army, how are we going to arrange to care for this extra work?

In the first place, how much more work can the individual physician do? Most of us are doing all we can handle at present. Therefore, we cannot say, for instance, that each doctor would have to take care of an additional third or half of what he is now doing. I do not see how anyone can really gage the extra amount of work that the doctor will be able to care for. Let us not lose sight of the fact that the health of the physician must also be protected. I believe that this, too, is an important factor in National Defense.

It seems to me, however, that one plan is certainly worthy of consideration, and that plan is to allow the students in medical schools to finish their education and not be inducted into the service. Beyond this, I believe that the graduate from medical school should be allowed to complete his year of internship. This will help in many ways. First of all, it will help us in our hospital work. We certainly cannot run a hospital without interns or without a sufficient number of them. Now, if the medical-school graduates are allowed to finish their internship, then these men would be able to do one of two things—either serve in the Army if they are needed or fill the places of those called into service. Personally, I think it would be advantageous to take the recent graduate into the training camp. He would be better suited to some of the routine procedures than the older physician.

Some may advance the argument that allowing the student to finish his course would make the medical schools a haven for draft dodgers. This argument, I think, is fallacious. The requirements for entrance into medical schools are so strict and the classes so limited that these institutions would carry on just as they have in the past. This would most certainly keep those not qualified out of the medical schools.

654 Seventh Street

#### SCHOOL PHYSICIANS TO MEET

The New York State Association of School Physicians will hold its Annual Meeting and Conference on June 23 at the Grand Union Hotel, Saratoga Springs, New York. A worth-

while program of interest to school physicians, nurses, dental hygienists, health officers, and general practitioners will be presented at the afternoon and evening sessions.

## SUBNORMAL VISION AND OCCUPATIONAL APTITUDE

ALBERT C. SNELL, M D, Rochester, New York

THE aptitude of individuals for particular jobs and their placement in such jobs, based on certain physical and mental standards, is receiving increasing attention from employers and management, from organized labor, from governmental labor departments, and from physicians. Each of these groups has a different point of view as to the minimum requirements for these standards which is influenced by their respective interests. These interests present problems in economics, sociology, and government. Employers and management are primarily interested in costs and production, labor in jobs and wages, and government in fair dealing between these two groups as well as in the welfare of the consumer. The physician's primary interest in these problems relates to the influence that physical defects may have on them and on the prevention or correcting of these physical defects, as far as possible, for the common benefit of all. Physicians would like to bring about universal physical perfection, but perfection does not exist and the desire for it is impossible of fulfillment. Therefore, placement in industry or in other vocations should take into consideration existing human abilities in order that all employables may find their proper place of usefulness. Such a method would imply a knowledge of individual aptitude for any specific job or service.

General aptitude depends on a high degree of general physical fitness, on intelligence, on personality, and on training or skill, all of which are interdependent. However, this paper deals only with the relationship of vision to occupational aptitude, and its scope is limited to a consideration of the place in industry for potential employees or those seeking advancement who have subnormal vision in one or in both eyes. That good vision is essential for almost every kind of occupation cannot be questioned. Although much has been written about the efficiency of normal vision for many types of employment, the question that considers, "How good must an individual's vision be to assure a reasonable degree of efficiency in a specific job?" has not received the attention it deserves. And on this question hinges the cleavage between the various groups mentioned above. A proper

answer to it will help to remove this cleavage between employer and employee and will place many potential employees into positions that they will be able to fill aptly.

Dr. Culler, in a paper entitled "Visual Efficiency in Industry" read recently before the Third Annual Industrial Congress, said "Industrial efficiency depends almost entirely on visual efficiency." This is a true generalization but, as recognized by Dr. Culler, it needs some modification and explanation to make the truth applicable and practicable. Although some degree of vision is essential to efficient accomplishment, not all types of work require the use of two eyes or the same degree of visual perfection in order that a job may be accomplished efficiently whether one is using one or both eyes. In some jobs only one eye is used for critical seeing, and such jobs may be accomplished even more efficiently by the monocular person. The following are examples: the watchmaker, since he uses his loupe before one eye, is just as efficient having only one good eye as is the two-eyed man, jobs requiring alignment of objects are done better with the use of one eye, also one-eyed laboratory workers who use the microscope or other monocular instruments of magnification are equally as efficient as are the two-eyed workers. There are many other occupations where this holds true. In these occupations and in similar ones the image of one eye, when both eyes have good vision, must be ignored or suppressed. This is most difficult for some to do. The one-eyed worker has no difficulty in this respect.

Another advantage for monocular persons is found in the fact that they rarely have headaches, without regard to nature of employment. This I pointed out in a paper written in 1921 in a study of 1,000 cases of functional monocularity. I have since verified this observation from many additional cases. Also, monocular individuals are less troubled with other symptoms associated with ocular fatigue or with heterophoria. Nor can they be troubled with symptoms associated with aniseikonia. Thus, freedom from many ocular symptoms contributes to their general efficiency.

Persons with perfect binocular vision, determined by the highest degree of perfection or by the established standard for normal eyes

—persons having perfect visual functions under all conceivable conditions of modern industry for prolonged periods of application—are in the minority To what extent subnormal vision is present among industrial employees, including the clerical force, may be seen from some recent statistics compiled by Dr Hedwig Kuhn and her co-workers in a paper recently read before the last meeting of the Academy of Ophthalmology and Otolaryngology She found 36 per cent of employees with defective vision (Her tests included more than just visual acuity) Serious visual defects were found in 15 per cent of all employees Dr Kuhn properly considered a 20/40 acuity as the dividing line between the "normal and the defective" and 20/30 as normal based on general visual aptitude Thus, 15 per cent of all employees had an acuity of 20/40 or less She found that 20 per cent of applicants for jobs fell below this standard The proportionate number of young adults having defective vision is illustrated by a recent report, made by Dr Kopetzky, of the number of draftees rejected because of defective vision He reports that 11.7 per cent of those examined for the draft were rejected for unlimited military service (Class 1-A) because of defective vision And the standard for this class is not high, being for acuity a 20/100 without glasses correctable to 20/40 bilaterally From these statistics it is shown that approximately 20 per cent of the adult population have subnormal vision of more than a trivial degree, and this is not the complete picture

In addition to the above, consider also that 2 per cent of the male population are color blind, that 20 per cent of the college graduates are myopic, and that the entire population who have reached the age of 50 will be found to have defective vision if visual tests must be made both for near and for distance *without the use of correcting lenses* Color vision is required for some occupations Many myopes have an acuity of less than 20/100 without glasses, and many potential employees are rejected on this ground To require that visual standards shall be determined from tests without lenses seems fanciful and ridiculous It is, but many compensation laws require that acuity be tested without glasses to determine visual disability and awards are made on this ridiculous basis If normal vision without the use of glasses should be required in all industry, 40 per cent of all employees under 48 years of age would be rejected, and after 50 years of age 100 per

cent would be rejected if vision both for near and for distance must be determined without correcting lenses The importance of determining reasonable standards of visual aptitude for specific jobs is obvious from a consideration of these facts if society is to make use of existing human abilities and if the number of the permanent unemployables is not to be increased

Employers and management, many of whom require a physical examination including a visual one of employees prior to employment, are much inclined to demand practically perfect vision of new employees This has caused a large percentage of potentially competent employees to be rejected In organized labor there is increasing resentment toward all physical examinations because of rejections that seem to them to be unjustified Departments of labor have much sympathy with this point of view In order to prevent conflicts and social cleavages between employer and employee there must be an understanding of each other's problems and a spirit of cooperation in their solution

Let us consider briefly some of the reasons for these conflicts and cleavages Is the demand for perfection for all kinds of industrial employment unreasonable? What would result from such a standard? Perfection in every individual is not demanded, nor can it be obtained, for other vocations For example, all persons are not endowed with equal physical strength, nor are they endowed with equal brain capacity To set up a standard equal to the best for any human physical or mental function would place nearly all of us in an inferior class and, if only the perfect can find employment, 90 per cent of employables would be on relief Defective vision would be the predominating cause for this situation Therefore, to set up a standard of physical perfection of function in any organ as a basis of employment is obviously unreasonable

Some of the reasons for the development on the part of the employers of the practice of requiring high visual standards for employees are not difficult to discover Management is primarily interested in efficiency, in costs, and in accident prevention, they have been led to believe that minor degrees of subnormal acuity express a comparatively high degree of visual inefficiency and, therefore, that these minor visual defects are responsible for considerable loss in productive efficiency and for accidents They have been assessed in some states at unreasonable rates for trivial

eye injuries This method of assessment is due to the fact that these state compensation laws do not base awards for visual damage on a percentage loss of working efficiency or of earning ability—not even on the percentage loss of function but often on loss of relative visual acuity alone Thus, minor degrees of subnormal acuity, which are far more frequent than the major, are given a relatively high degree of percentage disability For example, since relative acuity notations are erroneously regarded as fractions of vision in New York State, this state makes an award of 20 per cent when acuity is 20/25, a normal for many individuals, and a 50 per cent award when acuity is reduced to 20/40 Thus, New York's Labor Board holds one to be half blind with a best acuity of 20/40 But note the logical inference of this interpretation If this interpretation is correct, then the army is accepting all draftees who are half blind and New York State is permitting a person who is half blind to drive an automobile Such inconsistent, unsound, and erroneous interpretation of subnormal acuity causes confusion and makes employers wary of employing those with any degree of subnormal vision Furthermore, in many states pre-existing visual defects are not taken into consideration when the partial loss of vision is determined, and such determinations must be made without correcting lenses Therefore, since employers have learned that they are compelled to pay damages for losses to vision which are not the result of accident in their employ and since they have become conscious of the unfair assessment of damages for minor visual defects, they naturally wish to employ the young and only those having nearly perfect vision. These unfair methods of evaluation of visual disability are responsible for many rejections of applicants for employment If some of these unfair practices could be eliminated, there would be fewer rejections of potential employees with minor degrees of subnormal vision which, in fact, are not incapacitating

Labor and government are concerned with the discrimination against employees with minor physical defects since this implies that many of these who would be efficient at most jobs and who could be profitably employed are regarded as unemployable That many with minor visual defects who are otherwise physically fit are denied employment is well known to every ophthalmologist from his daily experience Many hundreds of case records could be cited to illustrate this point,

but I cite only the 3 following cases as examples

### Case Reports

*Case 1*—Mr T J, aged 20, has been recently rejected on account of vision by several industrial plants at a time when skilled mechanics are in demand for defense production. He has had four years, four thousand hours, training in machine shop work He has never had an accident and is regarded as extremely efficient He is much interested in machine work and is an intelligent youth, physically fit He has an acuity of 20/20 without glasses in the right eye and 20/200 in the left Right is hyperopic +0.75 S The left is amblyopic and has mixed astigmatism, improved to 20/100 He never has a headache He was told by the employment manager of the Curtis Company of Buffalo that they required an acuity of at least 20/50 in the poorer eye and also that the vision in the good eye might become blind because of the poor sight in the left

*Remarks*—This young man is becoming discouraged and cannot understand why he should be rejected The statement above as to the possibility of blindness is, of course, entirely fallacious

*Case 2*—Mr F B, aged 43, was rejected by E K Co because of defective vision He has been employed in construction work His visual acuity without correcting lenses was O D 20/65, O S 20/50, refraction O D -1.25 S C +1.75 C ax. 75°, acuity 20/30, O S -1.75 C ax. 180° acuity 20/20 Fundi were negative The patient states that he has done all kinds of building construction work

*Case 3*—Mr E E, aged 30, applied for a position as fireman for R.R. and was rejected because of his eyes He has a visual acuity of 20/15 in each eye Refraction was found to be +2.00 S O<sub>2</sub> The reason for rejection was stated to be "eyes were too strong"

Amblyopia in one eye with a 20/40 acuity or less, which is found in approximately 1 or 2 per cent of the adult population, is a common cause for rejection. Myopia of more than a -4.00 found in 5 per cent, is the next most common cause for rejection, even though there is a normal acuity with lenses Many myopic adults are more efficient at close work than are the normal or hyperopic workers Repeated rejections of these applicants, making them feel that they are unemployable, cause discouragement and inferiority complexes that often lead to a pathologic state of depression or, at times, to an anti-social attitude toward society or its established forms of government These potential employees should be given an opportunity to demonstrate their aptitude in suitable jobs.

In some special types of disability it would

seem advantageous to permit a waiver to be used. Many potential employees with at least one good eye could find employment more readily if more state statutes would permit such employees to waive their rights to compensation for specific hazards. This is done in Massachusetts. The specific hazards assumed by these employees should be definitely stated in the waiver, and the right of waiver should rest with the administrators of the compensation statute to protect the rights of the employee. The Massachusetts statute reads

"Section 46. No agreement by any employee to waive his rights to compensation shall be valid, but an employee who is for any reason peculiarly susceptible to injury or who is peculiarly likely to become permanently or totally incapacitated by an injury may, at the discretion of the department and with its written approval within one month of the beginning of his employment, waive his rights to compensation under sections thirty-four, thirty-five and thirty-six, or any of them."

By the use of the waiver, employers would not be required to assume any unusual risk connected with a known visual disability, for this would be assumed by the employee when he chose to assume some definite risk. When these employees are properly placed they rarely sustain accident. Support of this statement is found in a study of "second injury" cases made by Mr. Herbert A. Dallas, supervisor of rehabilitation, State of Massachusetts. ("Second injury" workers are those who have had some serious permanent disability, including loss of visual acuity to 20/70 in one eye.) Mr. Dallas states, in a letter written to me, that since the enactment of the law in 1919 to 1937 "only 19 cases of second injury eligible for payment from a special fund were reported to the Department of Industrial Accidents. In view of the fact that from 35,000 to 50,000 loss-of-time cases are reported annually, you will see that second injury cases are few and far between."

The growing tendency to demand a high degree of physical fitness, including vision, is found especially in those larger industrial plants with which there is connected a medical staff, on some of which there is a consulting ophthalmologist. In most of these plants there is a most commendable practice of continuing to employ those who have acquired defective vision either from accident or from other causes. The discrimination against

those with subnormal vision applies largely to new applicants for jobs. This growing tendency of discrimination can be reversed when *visual aptitude for specific jobs* is better understood by management and by industrial medical staffs. Such an understanding will be advanced when there are established authoritative visual aptitude standards. At the present time complete and satisfactory visual aptitude standards have not been established, and the establishment of minimum standards consistent with the required quality of vision for specific jobs is a necessary step for determining the proper placement of employees.

Not all jobs require perfect vision for a high degree of general visual aptitude. Accomplishment or industrial production depends on several factors in addition to good vision. As in general physical aptitude, visual aptitude also depends on intelligence, training, skill (natural and trained), personality, etc. Thus, aptitude for any specific job does not depend on normal vision alone but on a summation of functions and qualities. Therefore, in determining the placement of an employee—in determining his visual aptitude for any particular job—subnormal acuity or some degree of subnormal visual function should not alone be regarded as sufficient grounds for rejection. His placement should depend on his general physical and mental aptitude for a specific job, as well as on visual aptitude. Many employees with minor degrees of subnormal vision but who rate high in other physical or mental qualities may be even more efficient in certain jobs than are those with normal vision but who rate low in other aptitude tests. Thus, in order to determine "visual aptitude" there must be a consideration and correlation of the many factors that relate to the nature of the specific job, to individual characteristics, and to the minimum visual requirements that are necessary for efficient accomplishment.

Standards of visual aptitude cannot be established for all kinds of occupations simply by determining the degree of visual functional efficiency. Although this is an essential factor, *visual aptitude depends primarily on the nature of a specific job and the minimum degree of visual efficiency required for its effective accomplishment.* The problem of determining even visual aptitude alone is a complex one, requiring an analysis of all of the factors that relate to specific jobs. Therefore, to determine visual aptitude with some degree of accuracy it is found necessary to correlate all the variations in the technic of performance of all kinds of jobs and the specific demands

on the various qualities of vision which are necessary to meet these variations. Some jobs require a high degree of acuity, many do not, some require color vision, most do not, some require an accurate judgment of distance, most do not, many require depth perception, most do not, some require only near vision, others both, etc. We cannot discuss at this time either all the variations in jobs or the minimum visual requirements for specific jobs. However, these variations must be obvious. There is still much to be learned in this field, and many known facts need to be correlated in order to establish practical standards of visual aptitude for specific jobs.

Since acuity is the most important of these qualities of vision we shall give this quality brief consideration in order to call attention to some of the difficulties presented in attempting to establish reasonable standards. So far as acuity alone has influence on working ability for most occupations, one may make the general statement that a 20/40 acuity is the dividing line between good and efficient occupational vision and the beginning of visual inefficiency and that a 20/100 acuity is the dividing line between a serious degree of loss of efficiency and a total visual incapacity. However, in addition to acuity there are other visual factors that will influence occupational visual efficiency such as heterophoria, heterotropia, lack of fusional ability, eye dominance, possibly aniseikonia, and, for some occupations color blindness. Since every job does not require the same degree of acuity or other qualities of vision, visual requirements should be based on the minimum standards of vision found to be necessary for apt performance in specific occupations. Thus, these occupations should be classified in relation to the degree of visual efficiency necessary for working efficiency.

General classifications of jobs in relation to visual requirements have been made, but these are unsatisfactory, being too inclusive to be of value in the placement of most employees. For example, jobs are often classed as unskilled, semiskilled, and skilled, but this classification is not sufficiently specific. However, under this classification one may state that much common labor is aptly performed with an acuity of 20/200, that those employed in semiskilled tasks are apt with an acuity of 20/33 to 20/85, but that for the highly skilled operative in industry a binocular minimum acuity of 20/30 is necessary. For example, many occupations, such as inspectors, crane operators, operators of punch presses, and

those operating fast moving machinery or those in employment requiring the quick and accurate judgment of distance should possess a high degree of binocular efficiency in order to be safe and visually efficient. This generally requires, in addition to nearly normal acuity, the presence of stereopsis and a high rating for depth perception. To be a satisfactory aid in placement in the classification of jobs in relation to vision each class must be more restrictive. Some objection has been presented by labor to any classification of workers on a physical and mental basis, however, if jobs are to be found consistent with the degree of vision possessed by workers, classification of visual aptitude in relation to jobs is necessary for their proper placement.

Attempts have been made previously to divide types of employment into groups based on the degree of visual acuity thought to be adequate for each. But, as a rule, these have not divided occupations into a sufficiently large number of groups to meet the problem of proper placement. For example, Magnus and Wurdemann (*Visual Economics*, page 37) have divided all vocations according to visual demands into two groups, naming about 25 different vocations in each group. Dr. Culler has recently divided vocations into four general groups, the United States Civil Service Commission, in Circular Letter, Medical Series No. 37, *Standard Physical Requirements*, has listed five hundred field positions into thirteen groups. This "letter," which is a manual, is the best approach to establishing working standards for vision in relation to jobs. In it all positions have been carefully analyzed, and each field position has been considered from the point of all significant variation in physical abilities that might be required by a wide variety of positions, in each case making a careful analysis of the duties of the position. The manual states that it presents "a nucleus around which a comprehensive system of standard physical requirements can be built." This manual contains a list of the largest number of positions placed in the largest number of groups yet published. In each of these groups the minimum visual acuity considered adequate for the jobs listed is designated. Consideration is given to adequacy of near acuity as well as to color vision when a specific position demands these qualities of vision. This grouping is made on a basis of general physical health, visual acuity, and hearing. Only the minimum visual standard is required for the major proportion of the five hundred situations listed, and in only a

few is the maximum standard required. The minimum acuity standard in this manual is 20/30 (Snellen) in one eye only, glasses permitted. This is stated as follows:

"Vision—Vision must be at least 20/30 (Snellen) in one eye, glasses permitted, and at least 20/200 (Snellen) in that eye, without glasses, except that persons whose vision with glasses meets the requirement named above, but whose vision without glasses is less than 20/200 (Snellen) in that eye will be suspended, and they will not be eligible for appointment until satisfactory evidence has been presented to the Commission showing that there is no disease or defect of the eye other than an error of refraction."

The minimum acuity standard for positions requiring considerable skill is

"Vision—Vision must be at least 20/40 (Snellen) in one eye, and 20/70 (Snellen) in the other, without glasses."

And the highest standard set, which is for prison custodial positions only, is as follows:

"Vision—For applicants of 35 years or under, vision without glasses must be at least 20/30 (Snellen) in one eye and 20/40 (Snellen) in the other, capable of full correction to 20/20 (Snellen) in each eye. Applicants over 35 years of age will not be held to this standard provided the uncorrected vision is not less than 20/70 (Snellen) each eye capable of full correction to 20/30 (Snellen) each eye. Color vision must be normal."

Despite the fact that in my opinion these standards are the fairest yet published, there are a few designated positions for which the visual standard is too high. For example, a janitorial position could be aptly filled with a monocular acuity of 20/40 with correction. However, this manual, as it states, can be a "nucleus" around which there may be added many other specific jobs and a further division of visual requirements that may be found either adequate or necessary for efficient workmanship and safety in all fields of employment.

There is need for extending the investigations now being conducted by Dr. Kuhn and her co-workers along not only the line of "Eyes for the Job" but of jobs for the eyes. There should be a further coordination of visual aptitude and specific jobs. This will require the establishment of visual aptitude standards that will be adequate for every kind

of employment. Many positions can be classed together, but the classes should not be too inclusive or too broad. Standards on this basis have not as yet been established, but I trust they are in a formative stage of development.

My purpose in this paper is to ask for your interest and cooperation in aiding those who have some degree of subnormal vision in securing jobs for which they have adequate visual aptitude. Although one should advocate a high standard of vision for those positions where it is necessary for safety and for efficient production, the great majority of positions can be aptly filled by those who can meet minimum standards that are less than the highest. These potential employees should not be labeled as unemployable visual cripples but should be aided in securing that type of employment for which their vision is adequate.

There should be established by some authoritative medical organization, in cooperation with safety engineers, labor, and management, visual aptitude standards for specific positions or jobs. These standards should be the minimum consistent with the nature of the employment but should be sufficiently high to assure efficiency in production and safety to employees. The establishment of such visual aptitude standards will place many qualified employees in suitable and productive positions that are denied to them at the present time.

## Discussion

Dr. Walter S. Atkinson, Watertown, New York—We are particularly fortunate to have such an outstanding authority as Dr. Snell present this most important subject dealing with the relationship of vision to occupational aptitude.

For some years we have had in our country what might be called an "Employer's Market"—that is, there has been so many unemployed that the employer has been able to pick and choose rather carefully and only employ those who were physically and visually fit.

Therefore, standards of vision for different occupations designed to place in employment men with defective vision probably have been, in a great measure, disregarded.

One cannot feel too critical toward these careful employers who have had to compensate employees for 50 per cent loss of vision when their sight has been reduced to 20/40 as a result of injury, since, as pointed out by Dr. Snell, the United States Army accepts these "half blind men" in Class 1-A and New York State allows them to drive a car. Employers will probably continue to choose quite carefully and be afraid

to do otherwise until a different and more reasonable attitude is taken

Let us place ourselves in the position of the employers with an abundance of material from which to choose. Would we intentionally select defective applicants with many normal ones available?

Today the conditions are changing rapidly from an "employer's" to an "employee's market," where the employee will be able to pick and choose. Most will agree that it is not ideal for either to be in a position to wield the whip too freely.

However, as we approach the time when there is no longer a great surplus of labor and when neither the employer nor the employee has the whip hand, then we must have some standard of occupational visual aptitude to follow—one that is fair to both the employer and employee.

Dr Snell has referred to the United States Civil Service Manual as the fairest yet published. However, a somewhat different standard may be desirable for private industry.

We are all familiar with Dr Snell's outstanding work regarding vision in industry. As you know, Dr Snell was largely responsible for the excellent formula for computing visual losses and the compensation for eye injuries which was approved by the A.M.A. in 1925 and is the accepted standard in many states.

The appointment of a similar committee, headed by Dr Snell with his extensive experience in this field, to draw up visual standards suitable for different occupations would be most opportune.

Dr James I. Farrell, *Utica, New York*—I deem it a great privilege to have been given the opportunity to read and study Dr Snell's paper. As you all know Dr Snell has, for some time, been outstanding in trying to get some uniform standard of visual acuity and percentage loss of vision accepted by the various legislatures in the country. We should consider ourselves fortunate in having Dr Snell present this new study to us first.

The essayist has covered the subject so well that it is difficult to find much to add to it in this

discussion. It is possible that he includes visual fields in the term "occupational visual efficiency," but I feel that they should be more clearly emphasized. We all know of individuals who have 20/20 vision with hemianopia or who have 20/20 vision but whose fields are so contracted that they are a much greater hazard driving a car or a greater risk in a factory than some person with a 20/40 vision with normal fields. Even a one-eyed man with normal visual acuity and field is a far safer one to have around machinery than one with single binocular vision, a 20/15 vision in each eye, but with the small central field found in some people with retinitis pigmentosa.

I believe that it is important to stress the fact that "heterophoria, heterotropia, lack of fusional ability, eye dominance, aniseikonia, color blindness," and visual fields are as important to consider in accepting a man for specific jobs as is visual acuity alone. I know that in three of the foundries in Utica and in one paper mill and one brewery the pre-employment examining physician takes into consideration the job the man is going to do before he turns him down because of a visual defect. If men with one eye have had exceptional training or are hard to find for a particular job, there is no hesitancy about hiring them. However, in one of the largest plants in Utica rigid visual acuity requirements for distance and near have been set up, and nothing else is considered. If an applicant fails the acuity tests, he is not hired. Some of the employers require no eye tests at all.

It is quite obvious why managements do not want to employ monocular workers—if anything happens to cause loss of the single eye, it means permanent total disability. There are many jobs that these men can fill without much danger of an injury to the only eye, and it seems to me we should try to teach this to the laity.

I would like to ask Dr Snell how we can help in getting "jobs for the eyes," and also how we can help getting sensible and fair rulings from the compensation courts on the percentage loss of vision following an accident?

I wish to thank Dr Snell for his excellent paper.

## TYPHOID CARRIERS

A total of 434 typhoid carriers, exclusive of those in state institutions, were under supervision in upstate New York at the close of 1940, reports *Health News*. Thirty-seven new carriers were added to, and 25 were removed from, the register during the year. Twenty-eight were discovered as a result of epidemiologic investigation of sporadic cases of typhoid—1 by means of release cultures, 1 as a result of routine food handler examination, and 2 accidentally discovered at time of cholecystectomy. Five previously discovered carriers were added to the register. Two of these had been residing tempo-

rary out of the state, and 3 had returned to upstate New York from residence in New York City.

Of the twenty-five carriers whose names were removed from the register, 15 died. Six were released from restrictions after the submission of the required number of negative fecal and duodenal specimens following cholecystectomy, 1 was committed to a state institution, and the names of 3 others were removed because of change of residence of the carrier to a community outside the jurisdiction of the department.

# THE PRACTICE OF RADIOLOGY

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CONSIDERABLE progress has been made in all branches of medicine. Radiology has not been backward in this respect, despite the fact that many obstacles have been thrown in its path particularly that branch which deals with diagnosis. The presentations before this section demonstrate some of the newer practices established in the fields of diagnosis and therapy.

Sixteen years ago in a decision of a non-medical case (*Sausser vs the New York City Health Department*) rendered by the Court of Appeals of the State of New York, the presiding justice made a side comment, which had no bearing on the case in question before him, to the effect that the interpretation of roentgen films was not to be considered as the practice of medicine. This has permitted many inroads into the practice of roentgenology by untrained and unqualified lay individuals. Organizations and corporations also took advantage of this situation—some with and some without ulterior motives for profit, some rendering a valuable service, and others rendering a service that is of little or doubtful value. Even though the Medical Practice Act states that anyone who holds himself out to diagnose and to treat is *practicing medicine*, legal minds have held that the diagnosis concluded from a roentgen examination is not to be construed as the practice of medicine. This is an awkward situation, for you and I know differently. Efforts directed at the Educational Department and the Legislature of the State of New York have failed to correct this awkward situation. These efforts have been met with a variety of barriers and resistances which are almost insurmountable. Even the 1940 session of the Legislature, which adjourned on March 29, failed to correct this situation.\*

I believe it is timely for an educational campaign to correct the above-mentioned condition to be directed to the medical profession, and to the public, stressing the following:

1 Radiology is a special branch of medicine which deals with diagnosis and treatment of diseases by means of roentgen rays and

radium. A roentgen examination is a diagnostic procedure that requires considerable knowledge and skill. These facts are acknowledged by the local, state, and national medical societies and health agencies.

2 Anyone engaged in this special branch of medicine is practicing medicine. This special branch of medicine should not be usurped by lay individuals, organizations, or corporations. Legally, only individuals, not organizations, are licensed to practice medicine.

3 The public and the medical profession should be taught that a roentgen examination belongs to a specialized field of medicine. A roentgenogram is not a photograph, nor is it a picture. The term picture should not be used by the medical profession. The interpretation of a roentgenogram is not self-explanatory, nor is it obtained in the developing solutions. It requires considerable postgraduate training.

4 Interpretations of roentgenograms should be made by doctors who have had adequate training in radiology and by other physicians who have specialized training in the roentgen diagnostic aspects of their specialties.

5 The American Board of Radiology certifies doctors qualified in radiology.

I should like to call your attention to a recent Mississippi court decision, sustained on appeal, permitting an *x-ray technician* to make a diagnosis of a fracture of the spine from roentgen films but not permitting him to state the cause for the fracture. Here is an instance where again a judge ruled, permitting an *x-ray technician* to make a diagnosis. This court action further brought out the interesting fact that the *x-ray technician* was interpreting, diagnosing, all the films of the roentgen examinations made in the hospital where he was employed. Would the medical staff of which you are a member permit a situation of that kind in your institution? Incorporated in a recent revision of Section 7 of the "Essentials for a Registered Hospital," which was adopted by the House of Delegates of the A.M.A., was the following: "The responsibility for all radiologic examinations must rest on the physician-roentgenologist who is head of the department." It seems to me that in an educational campaign as mentioned above we

Chairman's address. Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 6, 1940.

\* The Radiology Bill met with no success in the 1941 session of the Legislature.

should direct our efforts vigorously in directions that will interest our medical staffs, our hospital superintendents, hospital boards of trustees, judges, lawmakers, social and welfare organizations acting as auxiliaries to the medical profession, and perhaps one of our own county societies

At the annual meeting of the A.M.A. in 1938, the Council of the A.M.A. passed a set of resolutions, pertaining to the renting of radium. These resolutions have been approved by the national radiologic societies, the American Radium Society, and the Inter-Society Committee for Radiology. One of the resolutions which I believe of considerable interest, one that you all should know and should disseminate as part of the educational campaign, is that it is unethical for any physician who has not had the privilege of examining a patient to prescribe or direct the use of radium. I believe the above statement should be heeded by those who inadvertently are guilty of such practices and are not aware of the fact that this is unethical.

The generation and utilization of roentgen rays are not attendant without dangers. Qualified radiologists know of the dangers and know how to protect their patients, themselves, their employees, and neighbors from them. I know of no instance within the past fifteen or twenty years where a radiodermatitis developed in a well-trained individual. If a dermatitis did develop, I am certain he or she would attribute it to his or her own negligence or carelessness. We have profited by the unpredictable and unfortunate experi-

ences of the pioneers in radiology. Had they had the knowledge of the measures of protection which we have, I am certain that many of them would be here with us today, with limbs sound and intact.

Recently, there was newspaper publicity portraying a shocking accident, the result of manipulation under a fluoroscope. It is my impression that the accident could have been avoided. I believe it occurred because there was insufficient knowledge on the part of an overzealous surgeon in using a dangerous modality. A word of caution is necessary at this time to the untrained in the use of a dangerous modality, since there is a greater tendency on the part of many clinicians and specialists to employ fluoroscopy and roentgen procedures as an aid in the diagnosis of diseases.

The indiscriminate and prolonged fluoroscopic examinations by the untrained will react to the discredit of radiology. The radiologists should instruct their medical confreres of the dangers attending fluoroscopy and how to avoid them. A word of caution is especially directed to the surgeon who, in his anxiety for a perfect anatomic result of a fracture set under the fluoroscope, desires another and another and still another observation. Each succeeding observation carries an additional danger.

The above indicates the necessity for a comprehensive educational campaign directed in such a manner that it will benefit and protect the doctor as well as the public.

667 Madison Avenue

#### NURSE PRACTICE LAW AMENDED

Governor Lehman has signed the Todd amendment to the Nurse Practice Law, thereby granting an extension of time for nurses to apply for licenses. Applications for license as either graduate or practical nurse will be received by the State Board of Nurse Examiners until July 1, 1941.

This measure was sponsored by the Legislative Commission to Formulate a Long Range Health Program for New York State. Many nurses, both graduate and practical, who failed to make application under the present law have wished to apply for their licenses. It is to give these nurses, who may have the qualifications required by law, another opportunity to apply for licenses, that the time extension has been given. Qualified out-of-state graduates may also make application to try New York State Board examinations.

All applications must be filed with the Board

of Nurse Examiners by July 1, 1941. This extension will give the Board of Examiners a brief period in which to finish reviewing the applications now on file and those which will come in between now and July 1. The Nurse Practice Law will thus work no hardship upon qualified nurses whose applications have been filed but who may not receive licenses by July 1 of this year. Under this amendment they may continue to nurse for hire during the period of waiting for final action upon their applications.

Every nurse who wishes to continue the practice of her profession is urged to complete her application and file it with Miss Stella Hawkins, Secretary of the State Board of Nurse Examiners, Albany, New York, by July 1, 1941. After that it will be too late. Everyone who knows a nurse who has not yet made application for her license is requested to call her attention to this article.

# CONTRAST CINEROENTGENOGRAPHY OF THE CIRCULATORY ORGANS

WILLIAM H STEWART, M D , C W BREIMER, M D , and HERBERT C MAIER, M D ,  
New York City

ONE of the most important advances in roentgenology in recent years is the technic developed by Robb and Steinberg for the visual demonstration of the cardiac chambers and great vessels. Following the rapid intravenous injection of a 70 per cent solution of diodrast, a portion of the blood stream is rendered temporarily roentgen-opaque, and the opaque fluid can be followed in its progress through the heart, lungs, and great vessels. This work has added much to our knowledge of the anatomy, physiology, and pathology of the central portion of the circulatory system. The technic of this intravenous method has been clearly set forth by Robb and Steinberg [Am J Roentgenol 41 1-17 (Jan ) 1939], and no attempt will be made to redescribe it here.

With ordinary roentgenographic equipment it is possible to obtain only about two films of the heart and lungs in the interval between the introduction of diodrast into the antecubital vein and the time when the shadows disappear owing to the passage of the diodrast from the heart and great vessels. Variation in the speed of the progress of the opaque material through the circulatory organs and lungs in pathologic conditions adds to the difficulty of exactly timing the film exposures to show the structures desired. This difficulty has been largely overcome by predetermination of the circulation time by cyanide and ether tests.

Recently, we have successfully applied cinerointerography in connection with the injection technic of Robb and Steinberg. The usual cinerointerographic equipment was used and exposures were made at 16 frames a second. In a ten-second exposure 160 successive films were made showing the progress of the injected material. From this strip of film, made into a loop, multiple prints were made which, when projected, give a permanent record of a considerable portion of a circulatory cycle and faithfully reproduce the appearance present on the fluoroscopic screen.

Briefly, the following series of events is observed. The injection into one of the antecubital veins is made simultaneously with the

onset of deep inspiration. The opaque medium, 40 cc of 70 per cent diodrast, forms a solid column in the subclavian and innominate vein and superior vena cava which reaches the heart in about one second and then delineates the right auricle and ventricle. In the normal person two seconds later it enters the pulmonary arteries, the appearance resembling the "star burst" of a fireworks display in its sudden spread, gradually fading as it leaves through the pulmonary veins. Normally, about five seconds from the time of injection, although somewhat diluted, the medium enters the left auricle and ventricle and then outlines the aorta within eight seconds from the time of injection.

For the production of satisfactory films, whether single or runs, care must be exercised in the selection of subjects. They must have veins that will readily accommodate the large cannula. The subject must not be too thick-chested or otherwise resistant to the x-ray and must be able to remain in the erect position with arms elevated for a period of at least ten minutes. Relative freedom from anxiety is also desirable to insure smooth progress of the procedure.

Robb and Steinberg have shown that there is little if any danger connected with the injection of the required large doses of diodrast. The common discomfort complained of is a feeling of warmth shortly following the injection and infrequently some nausea and vomiting. Occasionally, the patient suffers from a urticaria, which shortly disappears. Some patients have a phsyic effect with faintness which, with moral persuasion and rest in the recumbent position, soon disappears. An indication that the procedure is not particularly disagreeable is demonstrated by the fact that several patients have voluntarily permitted more than one such examination.

In general, the two most important positions for cinerointerographic studies of the intrathoracic circulation are a direct postero-anterior position, showing the entire chest to demonstrate the right heart and pulmonary circulation, and a left anterior oblique study, showing only the heart and aorta to demonstrate the separate cardiac chambers and the aorta without superimposition.

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 6 1940

When diodrast is injected into the veins of the arm it reaches the superior vena cava and right auricle in about one and one-half seconds, the right ventricle and pulmonary circulation is three to six seconds. It will be seen from this that with an available exposure time of eight to ten seconds the ether test for pulmonary circulation time will not be necessary since this phase can be covered by one exposure in all cases. A movie run starting not more than one second after the injection of the diodrast will show the right auricle and ventricle as well as the filling and emptying of the pulmonary circulation.

When a second injection is to be done to show the left ventricle and aorta, it is necessary first to determine the circulation time by the intravenous cyanide method. When a cyanide solution (0.3 to 0.45 cc of 2 per cent solution) is injected, a period of hypernea results, beginning when the cyanide reaches the carotid sinus. By noting the period between the injection and the onset of hypernea and subtracting about two seconds, the optimum time for study of the left ventricle and aorta is obtained.

For example, if the circulation time from the arm to the carotid sinus is shown to be twelve seconds, the optimum time for visualizing the left ventricle will be ten seconds after injection. An eight-second exposure starting six seconds after the injection of the diodrast will show the entire progress of the opaque medium through the left heart and aorta.

The cineroentgenographic results will not be satisfactory when the heart is dilated because the volume of intracardiac blood is so great that dilution of the opaque medium in the heart prevents proper visualization of the chambers.

We are giving no detail of our cineroentgenographic technic, since it has already been published in detail [South Surgeon, 9: 21-25 (Jan.) 1940]. The only change we have made recently is the use of a faster film. We are now using Agfa superpan supreme or Eastman Super XX. Both films are much more satisfactory than those we originally used.

The cineroentgenographic examination provides quite a thrill. A successful result depends upon every detail being carried out accurately and on time. Four factors must start at the same instant: full inspiration on the part of the patient, injection of the opaque medium by the medical assistant, the running of the camera by the photographer, and the energizing of the x-ray tube by the roentgenologist.

When the heart and great vessels are studied by the cineroentgenographic method after opacification with diodrast, much information may be obtained. The cineroentgenographic recording supplements the information obtained from films. Although it is not possible by present methods to obtain the same detail of structures that can be obtained with the film, there is the advantage of visualizing the entire cycle through the great vessels and heart. For this latter reason it is sometimes possible to depict abnormalities not shown on roentgenograms. The cineroentgenographic method also gives a graphic presentation of the circulatory dynamics. The method can be used for teaching purposes. To date, by this procedure, cineroentgenographic demonstration of the following has been obtained:

- 1 Disturbance of blood flow through the great veins

- 2 The actual size of the pulmonary artery with its variations and deformities such as aneurysm, constrictions and displacements

- 3 The shadows of the pulmonary circulation with particular demonstration of the vascular component of the hilar shadows

- 4 The cardiac chambers with demonstration of the actual thickness of the ventricular walls. The abnormal contracture of the wall of a cardiac aneurysm

- 5 The demonstration of a defect in the septum between the right and left cardiac chambers

- 6 The visualization of some of the types of defects present in congenital heart lesions

- 7 The demonstration of aneurysm of the heart and greater blood vessels, as well as deformities, angulations, and displacements of the circulatory system in the chest caused by pathologic processes

\* \* \*

The authors acknowledge their indebtedness to Drs. G. P. Robb, I. Steinberg, and U. J. Roche for their assistance.

## Discussion

Dr. Marcy L. Sussman, *New York City*—The most sincere compliment to a scientist is imitation. Following the explicit directions published by Robb and Steinberg and the excellent moving-picture demonstration made by Dr. Stewart in Chicago last year, Dr. M. F. Steinberg, Dr. A. Grishman, and I, of the Mount Sinai Hospital, have been successful in duplicating the results reported here. We have modified the technic slightly to suit our available apparatus. We think that the use of a rotating target tube enhances the detail. As a result, instead of a continuous exposure of ten or twelve seconds

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Read at the Annual Meeting of the Medical Society of the State of New York, New York City May 6, 1940

# A NEW ANGLE ON TRIGEMINAL NEURALGIA

A Study of 245 Cases with Observations on Seasonal Occurrence and Surgical Technic

HENRY WARD WILLIAMS, M D , F A C S , F I C S , Rochester, New York

**D**URING the past seventeen years I have personally treated 245 cases of true tic douloureux. These have not been previously reported, and the following statistical account and certain facts that have been observed in the course of study are here presented. The symptomatology of the disease shall not be discussed and, since the cause of trigeminal neuralgia has not as yet been established, mention of this will also be omitted.

Trigeminal neuralgia has been known to the medical profession since Fothergill's classic description in 1773. During the past fifty years efforts to treat this disease have been progressively more successful.

The principles of treatment are simple—namely, anything that interrupts the sensory path from the face to the brain is sufficient to arrest the disease. If the point of interruption is distal to the gasserian ganglion, relief will be temporary and the pain will recur, if it is proximal to the ganglion, relief will be permanent. The quickest method is injection of alcohol in the affected branches of the trigeminal nerve. Another method, not so reliable, is administration of trichlorethylene by inhalation. The surest method for permanent results is surgery.

Early surgical attempts, which included removing the ganglion or evulsing peripheral branches of the fifth nerve, were not always satisfactory since there was a high mortality in complete resection of the ganglion, while evulsion of the peripheral nerves gave results that were not so prolonged as the injection of alcohol.

Modern surgery of trigeminal neuralgia originated in 1901 when Spiller devised and Frazer<sup>1</sup> first performed the operation of interrupting the connection between the gasserian ganglion and the brain. This simplified the operative procedure and today there are three courses of surgical approach—namely, the temporal approach of Frazer, which is the method used in all but 1 case in this report, the posterior approach of Dandy<sup>2</sup>, and tractotomy, which was created by Sjökvist and developed by Rowbotham.<sup>3</sup> The pros and

cons of the various surgical approaches would occupy an entire paper in itself so they will not be discussed here. Even though these three procedures are standardized, application of them varies according to different clinics.

This group was chiefly drawn from a densely populated section of the country where treatment of trigeminal neuralgia was formerly not available and where attempts at surgery, in this locality, were few, and because they were unsuccessful they gave the "tic operation" a bad name. This group offers a better cross section of the disease than would be available at any large clinic where patients would come from hundreds of miles after their disease had fully developed into a longstanding case of neuralgia.

In my experience I have found that few cases of trigeminal neuralgia are referred by physicians, while the largest number are referred by previously treated patients or by dentists. Those who have been sent to me by the "tic veterans" seem to realize thoroughly that permanent relief can be obtained only by surgery, and, therefore, they request immediate operation, usually refusing preliminary injections when suggested to them. If a new tic lacks information, however, and has had no contact with persons who have experienced surgical treatment for this disease, I usually inject them as an initial procedure, this relieves them promptly and by the simplest method. By proceeding in this manner I find that I am compensated by having these patients immediately put at ease, and they are no longer difficult problems to handle (this is often a psychologic angle that we encounter in persons suffering from "the pain"). To obtain prompt and satisfactory results I have avoided extensive preparations that might disturb the patient and have injected that branch of the nerve nearest the trigger point, either deep or superficial, rather than always attacking the main divisions at their point of emergence from the skull as I formerly did. If this does not bring immediate results, further injections are done until the trigger point is anesthetized and the pain, therefore, relieved. This enables the patient to become well acquainted with the numbness and various sensations that constitute the ultimate

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From the Highland Hospital.

such as Dr Stewart makes, we have to limit ourselves to two consecutive exposures of three or four seconds.

The injection method of Robb and Steinberg appears to be perfectly safe. We have made between seventy and eighty injections with no untoward results, aside from transient discomfort. A noninflammatory sclerosis of the injected vessel occurs in a small percentage of cases.

The moving-picture method has obvious advantages over the two- or three-roentgenogram method, chiefly because it provides a continuous and dynamic recording. The difficulty of timing exposures to show desired structures is eliminated. In addition, direct observation of the screen can be made during cinematography which also contributes to a better interpretation of the

results. The major disadvantage is loss of detail and, to some extent, loss of contrast.

The question of the practical value of the contrast visualization of cardiac chambers and great vessels is now under intensive investigation. The great vessels, as Dr Stewart has indicated, are easily and completely visualized. Undoubtedly, differentiation of mediastinal tumors, for example, has been made more sure. The value of the method in cardiac disease, however, will probably lie in the better understanding of the underlying pathologic physiology rather than in marked improvement of clinical diagnosis. It is in this field that the motion-picture recording is likely to find its greatest application. Dr Stewart's presentation is an inspiring and pioneering illustration of the method.

## SECOND AMERICAN CONGRESS ON OBSTETRICS AND GYNECOLOGY

The Second American Congress on Obstetrics and Gynecology will be held in St. Louis, April 6 to 10, 1942. All of the meetings and both the commercial and educational and scientific exhibits will be held in the Public Auditorium.

The various committees have been set up and the following chairmen have been appointed: Executive Committee, Dr Fred L. Adair, Chicago; Program Committee, Dr E. D. Plass, Iowa City; Motion Picture Committee, Dr Robert D. Mussey, Rochester, Minnesota; Educational and Scientific Exhibits, Dr H. Close Hesseltine, Chicago; Commercial Exhibits, Dr Philip F. Williams, Philadelphia; Lay Publicity, Dr Joseph L. Baer, Chicago; Professional Publicity, Dr George W. Kosmak, New York City; Publications Committee, Dr Goodrich C. Schauffler, Portland, Oregon; Evening Meetings, Dr Robert L. DeNormandie, Boston; Membership Committee, Dr Buford G. Hamilton, Kansas City, Kansas; and Budget and Finance Committee, Dr William C. Danforth, Evanston, Illinois.

The general plan for the program will be much the same as that of the first Congress, which was

held in Cleveland, September 11 to 15, 1939, with sectional meetings for the various groups (nurses, public health administrators, educators, and physicians), general sessions for all members attending the Congress, and round tables. There will be evening sessions open to the public.

Adequate time for registration will be given the first day before the opening of the sessions of the Congress. Admission to the Congress will be by individual membership card only. These may be secured by payment of the registration fee (\$5.00) any time after September 1, 1941.

At the suggestion of the Medical Exhibitors Association, more time will be allowed for the members of the Congress to visit the exhibits. The response to a letter sent to the firms handling products of interest to our group telling them of a second Congress has been excellent, and we are assured of an excellent Commercial Exhibit.

The hotel headquarters have not been assigned to the various groups as yet, but the Medical Section and General Congress Headquarters will be in the Jefferson Hotel.

For further information, apply to the Chicago office of the Congress, 650 Rush Street.

## ELECTROCARDIOGRAPHY

The Michael Reese Hospital, Cardiovascular Department, offers a full-time intensive course in Electrocardiography from August 18 to August 30, 1941, by Dr Louis N. Katz, director of cardiovascular research.

This is an intensive course offered to the general practitioner. There will be practice on several electrocardiographic machines and discussion of the principles of their construction and use. There will be sessions on interpretations of electrocardiograms illustrated by lantern slides, and practice by the student with unknown records. Routine records taken during the time of the course will be discussed. Emphasis will be placed on chest leads and on the importance of the electrocardiogram in coronary

sclerosis and myocardial infarction. The mechanism and interpretation of heart irregularities will be developed.

As group and individual instruction will be given, the course is open to both the beginning and advanced student in electrocardiography. It is planned to individualize the course so that at the end of the period each student will be capable of taking and properly interpreting routine electrocardiograms. In order to accomplish this purpose the class will be limited in number. It is imperative, therefore, that reservations be made early. For further information address Michael Reese Hospital, Cardiovascular Department, 29th and Ellis Ave., Chicago, Illinois.





Fig 1 Patient after subtotal resection of both sensory roots showing zone of anesthesia

cure Future course of treatment is then discussed with them, and they are told that they should be operated upon at the first recurrence. Patients should be informed that the average injection lasts a year, that it may be repeated several times but that it cannot produce an eventual permanent cure, and that repeated injections are only effective for fifteen years at the longest. In this series, however, there were 2 patients in whom one injection lasted over ten years.

Although the disease is more prevalent in persons of middle and advanced age, I have had a number of cases in persons younger than 40. Patients belonging in this group have always been injected first, to conform with the general rule of relieving as expeditiously as possible, also because their span of life may be assumed to be sufficiently long so that when surgery appears to be imperative they should still be good risks. Patients in the higher age brackets, i.e., those over 80 who are not good surgical risks either because of their age or other physical conditions, are also treated by injection. Notwithstanding this, very old persons may be in excellent condition and, if so, are operated upon at once. Between the ages of 60 and 80 it is wiser in healthy persons to operate immediately upon seeing them. If a course of injections is once commenced, it is difficult to persuade the patient, and particularly the relatives, that operation should be performed. Relatives then claim that the patient is too old and cannot stand surgery so they insist on a continued course of injections. When the effects of alcohol injections perforce wear out at the end of a period of

TABLE 1

Age	When First Seen	When Operated Upon
20 to 29 inclusive	7	0
30 to 39 inclusive	23	9
40 to 49 inclusive	34	16
50 to 59 inclusive	56	30
60 to 69 inclusive	54	30
70 to 79 inclusive	62	16
80 to 89 inclusive	6	1
90 and over	1	0
No age record	2	0
Total patients	245	Operations 102

years, the patient is usually still alive and an operation has to be done on a person nearing the age of 90 or at least prone to the infirmities coincident with old age. We feel that we should not be required to operate on such patients when this can be avoided much earlier. Our only 2 surgical deaths came in this category.

It will be noticed in Table 1 that the large majority of persons with *tic douloureux* came for relief between the ages of 50 and 79, inclusive, while the greatest number operated upon were between 50 and 69, inclusive. In other words, we try to avoid having a sufferer pass the age of 80 without having had the benefit of surgery.

This group of 245 cases includes 109 patients who came to surgery for relief and represent a total of 110 operations—102 done by me and 8, treated by me, who were operated upon elsewhere.

One man had neuralgia on both sides and was first operated upon on the right side (Fig 1). Two years later, because injection treatment of the other side had become ineffective, a subtotal resection was done on that side also. This resulted in complete relief of pain. Fortunately, the motor roots were intact on both sides, and the only inconvenience that this man has since experienced is the inability to test temperatures by mouth, he has been obliged to use his fingers to determine the heat of foods and beverages to avoid burning his throat. Also, he cannot be sure that his mouth is entirely closed. Another patient with pain in the first division was relieved by tractotomy after two transtemporal operations had failed to produce results. With the exception of this case all these operations were done by me by the transtemporal route. The technic employed is similar to Frazier's but differs in that we usually use avertin anesthesia and, surgically, the root is divided close to the ganglion. Like Frazier's, this operation is done with the patient in a sitting position, further, the patient is allowed to get up on the third day and, as a rule, is discharged on the sixth post-

operative day In 19 cases the entire sensory root was removed and in 83 the lower two-thirds Early in my practice, in those cases where the entire root was removed, 4 patients developed corneal ulcers, but in the last ten years we have successfully avoided this complication. In fact we no longer warn patients of this danger Avoidance of corneal irritation is achieved by dividing the root close to the ganglion, not according to Dandy who resects the root close to the pons This method ensures, in almost every case, accurate anesthesia, inclusive, of the lower lid, while the upper lid will have sensation and the cornea will remain sensitive

Two surgical deaths are reported, both were caused from intercranial hemorrhage following operation There were 2 cases of temporary facial paralysis One case of total ophthalmoplegia on the side operated upon fortunately recovered in three months The other case of temporary hemiparesis following an injection that accidentally penetrated the carotid artery also recovered (Since this experience I have made it a practice, before injecting alcohol, to draw on the syringe plunger to note if blood can be sucked out through the needle and to always inject a small amount of novocain before alcohol every time the needle is moved) Another patient who three years after surgical treatment had a recurrence of tic, apparently due to incomplete removal of the lower part of the root, was operated upon a second time with satisfactory results

Trichloroethylene was used in a number of cases but proved effective in only 8 It does not seem to be so useful in chronic neuralgia as in acute neuralgia Two cases refused all treatment, 1 was so alarmed by the prospect of injection or surgery that she committed suicide The remaining have all received injection treatments, including those who were poor surgical risks or were very old and a number of others who have been injected once or twice and will eventually come to surgery

Of the 245 patients reported in this paper 109 have to date come to surgery—44.5 per cent Of a group totaling 1,317 patients treated by Frazier,<sup>4</sup> reported in 1931, 654 were operated upon—49.6 per cent

A careful study of this series in an endeavor to determine to some extent the behavior of trigeminal neuralgia brought to light these facts the disease is more prevalent among women and it affects the right side of the face far more frequently The proportion is women, 160, men, 85, right, 148, left, 90 (in

3 cases the side affected was not recorded)

There were 6 patients with involvement on both sides, one was treated bilaterally by injections, 4 were operated upon on one side (1 elsewhere) and injected on the other, the sixth case, previously mentioned in this report, was operated upon on both sides

There seems to be no relation between right- and left-handedness in connection with the side of the face affected in these patients, although the information available in this factor is contained in only a few of the records It did not occur to me to consider this point until recently

The divisions that were affected are as follows first alone, 17, second alone, 77, third alone, 41, second and third, 83 The total with pain in the second division is 160, the total with pain in the third division is 124 In the remaining cases patients did not specify the exact location of pain Those with second and third division pain were operated upon by the temporal route, and this method will be continued in the future Only 5 of the first-division cases were operated upon—4 by total resection of the root and 1 by tractotomy In the future all patients having pain confined to the first division will have tractotomy

### Seasonal Occurrence

I have noticed for a number of years that during certain months more persons came to me seeking relief from the pain of trigeminal neuralgia than at other times of the year Pursuant to this observation we have recently made a careful study of all records of patients I have treated My first impression, based only on recollection of being particularly busy with cases of tic douloureux in the early spring and again in the beginning of fall, proved to be a fact after we had surveyed all my filed records It became apparent that more patients suffering from this disease came to me in the months of March and October We further observed, on the other hand, that noticeably few came in the months of February and August We then attempted to determine whether there existed a definite "season" wherein trigeminal neuralgia is most violent To determine this it did not seem proper to use the operative dates, because, in too many ways, varied factors would cause surgery to be delayed for brief or extended periods The date on which each patient first required my services was established as a fairly reasonable mark by which to gauge the possibility of a "season" for tics Accordingly, the case records were classified to concur with these first

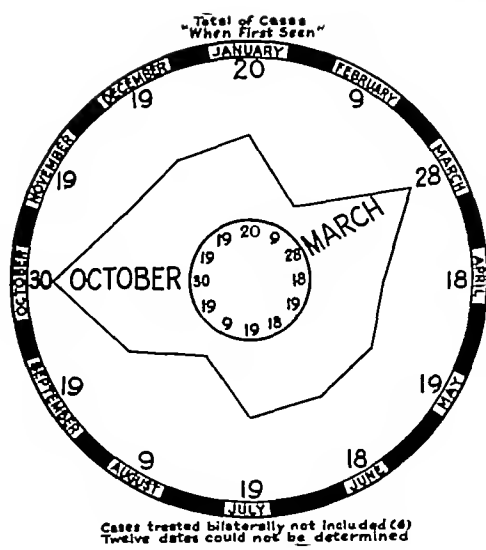


FIG 2

dates There were twelve records in which the first date could not be determined accurately enough to be used Graphic representation of these findings is shown here (Fig 2) It may be observed that there are two high points—March and October—and two low points—February and August At present I have no explanation for this phenomenon

It is reasonable to suggest that any one of these factors—the seasonal occurrence (based on time of needed pain relief), the superiority in numbers of both women and right side that are affected by the disease, compared to the respective sex and side, as well as probably other facts yet unknown—may have a definite bearing on the etiology of trigeminal neuralgia

Conclusions

Two hundred and forty-five cases of trigeminal neuralgia are reported The disease is much more prevalent on the right side of the face It is also much more prevalent among women than men If accurate differentiation in the part of the root resected is adhered to, no corneal ulcers will occur If severe pain in the first division occurs, tractotomy is the operation of choice There is a definite seasonal incidence to the disease, with major peaks in March and October and low points in August and February No explanation for this is here advanced

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2 Dandy, W E Arch Surg 18 687 (Feb) 1929

3 Rowbotham, G F Brit. Med. J 1073-1076 (Nov 28) 1938  
4 Frazier, C H J A.M.A. 96 913-916 (March 21) 1931

Discussion

Dr Byron Stookey, New York City—I am interested in the seasonal character of the disease in this report, and I offer my own statistics for Dr Williams to go over to determine what their incidence may be I agree with Dr Williams that the temporal route is the best approach, and that the operation devised by Dandy is not so safe as, and no more satisfactory than, the former I disagree with him in regard to injections I feel that all cases of trigeminal neuralgia need surgery and that they should be pressed by the doctor to accept it The patient who has been treated for a long period of time by alcohol injections is a pathetic figure. I agree, however, that very old persons or those who are poor surgical risks should be treated by injection. In other words, alcohol injections may sometimes be useful but only in a restricted sense

I do not agree with him in the case of bilateral differential section of the second and third divisions. The proprioceptor sense is not lost when the sensory roots are cut and the man could have determined whether his jaw was open or not

Dr Wallace Hamby, Buffalo, New York—I have heard Dr Frazier's scrub nurse mention that tic operations piled up at certain times of the year This concurs with the possibility of a seasonal incidence of tic I am very much interested

I am sure that the proprioceptor sense is retained in bilateral resection of the sensory root of the fifth nerve. The next case of bilateral neuralgia which I see will be treated surgically by bilateral tractotomy

I do not think that injection treatments for the disease have much to offer

I have lost 1 case—that of an old lady who had an area of thrombosis in the hypothalamic region of the brain at operation which appeared at autopsy, although during surgical procedure the blood pressure did not indicate this

Dr Henry Ward Williams (Concluding Remarks)—Dr Stookey's statistical figures for seasonal occurrence would undoubtedly enlighten us a great deal and should prove most interesting

When I stated that the man who had undergone bilateral subtotal resection of the sensory roots did not know whether his mouth was open or not I should have specified "lips" because, as a matter of fact, he does know at all times where his jaw is. I am quite sure that if Dr Stookey will test the bilateral resections he has done he will find the same condition exists

As I stated previously, my cases come from less distant places or are not so advanced in the disease as cases Dr Stookey is more apt to see, so frequently it is necessary to inject them at least once before being able to persuade them to submit to surgery

# AMEBIC DYSENTERY AS A COMPLICATION IN THE DIAGNOSIS OF CARCINOMA OF THE RECTUM

ARTHUR A. LANDSMAN, M D, New York City

IN LOOKING over the literature one is struck with the scarcity of cases in which amebic dysentery and carcinoma of the rectum occur simultaneously in the same person.<sup>1,2</sup> A diligent search of both American and foreign sources for the ten years between 1929 and 1939 brings out the amazing discovery that only 15 such cases have been reported during this period.<sup>3-11</sup> This is certainly unusual considering that there is no evidence of any natural antagonism between them. It is hard to believe this of two diseases that are individually so common and that have been so thoroughly thrashed out in every feature by both clinician and research worker. Carcinoma is a common disease in all parts of the world, it invades the intestinal tract of both sexes indiscriminately, and race and social condition bear no relation to its frequency. Age does not bar malignancy because it may occur in early life, and amebic dysentery has likewise been found in very young people and even in infants. Amebiasis is no longer looked upon as a disease of the tropics since it is found in all of its forms in the temperate zones, as witness the Chicago outbreak at the World's Fair in 1933 and others. We are not now concerned with the cases of pseudocancer complicating amebic dysentery, the so-called amebic granulomas of the large intestine, numerous instances of which have been reported by Gunn and Howard,<sup>12</sup> Gouchard and Paponnet,<sup>13</sup> Desjardins,<sup>14</sup> and Uzac and Timbal.<sup>15</sup> Nor are we concerned with tumors that mimic malignancy in their gross structure but are composed essentially of coils of gut matted together by plastic exudation, thrombosis of vessels, edema, and other manifestations of inflammatory reaction. At this time we are only interested in true instances of the co-existence of the two diseases, both occurring in the same individual at the same time.

When a patient complains of a discharge of blood and pus from the rectum, marked constipation or copious diarrhea, loss of weight, and anemia and when the sigmoidoscopic picture shows an ulcerative coloproctitis, the natural conclusion is to suspect some form of dysentery. If, added to this, there is a

history of exposure such as a visit to a suspicious area and if the microscopic examination is positive for *Endamoeba histolytica* the diagnosis is established. But here is the crux of the matter. Is there anything in these premises which would exclude carcinoma of the large bowel? Not at all. It is not enough merely to make an affirmative diagnosis of the presence of one disease, one must be prepared to prove that there is no other condition that could produce the same symptoms. Obviously, the patient may have amebic dysentery while at the same time be subject to intestinal malignancy, since all the symptoms of one may be present in the other except those that are purely objective. Fortunately, it is not difficult to solve this problem if only such a possibility is borne in mind and if a thorough local examination is made including x-ray of the colon. Cases of dual diseases in which one or the other has been missed are essentially due to incomplete diagnoses which are avoidable with proper care and are not necessarily due to failure of a co-existence of the two conditions. The object of this communication is to emphasize this and to review one such case that we had under observation.

## Case Report

A married woman, aged 52, whose previous and family histories were negative except that two sisters died of carcinoma at an early age, was first seen in February, 1933. She complained of attacks of diarrhea alternating with periods of constipation, distention, pyrosis, gastrointestinal distress, discharge of pus and mucus, tenesmus, and bleeding from the rectum, all dating back four months following a visit to friends outside of the city. A diagnosis of colitis was made by the physician in her home city on the basis of these symptoms, and she was treated by diet, irrigations, and internal medication without success. Inquiry into her history disclosed that she had been to Chicago during the World's Fair in 1933, four months before the onset of her illness. She was hospitalized, and an examination of the stools disclosed organisms definitely identified as the *Endamoeba histolytica*. She remained under treatment at the hospital with carbarsone, an arsenical preparation, orally and in retention enemas. Her diet was restricted and supportive treatment given. After six weeks she was discharged and came in for a follow-up, but no amebae were recovered after this. Some months later, because the symp-

From the Proctologic Service of the Jewish Memorial Hospital.

toms still persisted and to save the inconvenience of travel from her home, she consulted a local doctor who, after learning of her amebic infection, took it for granted that she had a return of her old trouble and treated her accordingly for several months. She failed to improve and returned here. Upon sigmoidoscopic examination, confirmed by x-ray and biopsy, she was found to have a malignant growth at the recto-sigmoid. Though no amebae were found at this time, we felt satisfied from the history and circumstances that she still harbored the infection, since it is not uncommon that the organisms may become quiescent for a time. It is possible that had the doctor not been misled by the previous history and had there been a more careful work-up in the first instance the growth might have been discovered by digital and sigmoidoscopic examination, if not beyond reach, or by x-ray if higher up.

### Summary

A patient with a previous history of amebic dysentery returned with a similar complaint months later to another medical man and was treated unsuccessfully on the assumption that this was a recurrence of her former trouble. The question of the presence of carcinoma of the rectum was not considered at that time. Sigmoidoscopic examination, undertaken later elsewhere, disclosed advanced carcinoma.

### Conclusions

All cases of ulcerative colitis of whatever origin should be subjected to a complete sig-

moidoscopic study and x-ray of the colon, because subjective symptoms of the two diseases are similar and only objective examinations may show the true nature of the trouble.

One is more likely to fall into error when there has been a positive bacteriologic examination or previous history of amebiasis and when the examiner is not alert and carcinoma-conscious. Thus, in our opinion, accounts for the paucity of recorded cases—not their failure to occur together.

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### "A MEDICAL UNDERWORLD"

"The ghostwriter is with us today in medicine as elsewhere. One cannot always be completely certain that one is not reading or listening to a ghostwritten paper or address," says a contributor to the *Bulletin* of the Medical Society of the County of Kings, and he continues: "Ghostwriting is a secret activity—which aligns it ethically, by the way, with feigning, there is an element of deception in both—in one case the patient is deceived, in the other the reader."

"While not a factor in the origin of medical ghostwriting, it can hardly be denied that our leading medical journal, which insists that its articles follow a rather stereotyped form, has simplified and facilitated the work of the ghostwriting sweatshops. Under such relatively rigid specifications it could be argued that articles might just as well be ghostwritten. They bore the reader and he peruses only the summaries and conclusions."

"We do not believe that were it not for the ghostwriter 'the machinery of everyday life and the foundations of civilization would wobble,' as has been argued. It seems to us that getting rid of our windbags, exhibitionists, and incompetents, the employers of ghosts, would be

wholesome and helpful. We believe that the social system could stand the transition. For the roots of the evil are not yet very deep.

"To a degree, the ghosts have become our 'artificers of ready-made and custom-made sentiments—skilled taxidermists of lifelike statements—the carvers of figureheads—the ventriloquists of patriotism, eloquence, high ideals and mock emotions.' And remember that the strictly medical ghostwriter is among the most highly talented. He, or she, can be a breath-taking artist. We have seen the work of these marvelous proxies, not yet so numerous in medicine, thank heaven, as in other fields."

"Ghostwriting is a disquieting thing. If it were to flourish much more than at present it would bring about a lack of full confidence in the creative genius or even everyday working capacity of the profession. In such shabby circumstances it would make one recall the hollow social shell that was France before the débâcle."

"It is our conviction that the great majority of our active men have no reason at all to depend in any degree upon 'the underworld of creative expression.'"

"Note and guaranty. This editorial not ghost-written, words by A. C. J."

# GALLBLADDER DISEASE

## A Consideration of Mortality

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GALLBLADDER disease is probably the most common intra-abdominal condition and manifests itself in a variety of ways. It is almost uniformly associated with symptoms which vary in degree, in disability, in danger and in the production of distant or remote sequelae. It is the general opinion that the gallbladder functions as a reservoir after the concentration of bile and as the control of the ebb and flow of bile into the intestinal tract. Infection of some type is basically the etiological factor in the production of pathological changes in the gallbladder, extra biliary system, the liver, pancreas, and more remote organs. No age or sex or constitutional status, is immune from gallbladder affections nor wholly protected from its effects.

The main symptoms of gallbladder disease are primarily local and confined to the gastrointestinal system. There are, however, certain allergic states that are due to a low grade, continuous infection of the gallbladder. There are, in addition, undoubted cases of remote effects in the production of various types of arthritis. Again, there is a systemic effect of gallbladder disease as manifested in continuous ill-health, called "cholecystic toxemia." Furthermore, even a moderate experience in gallbladder symptomatology will discover not a few cases of cardiac disturbance that are basically the result of gallbladder disease. The latter statement is not intended to include the mistake or error in diagnosis that is occasionally made in considering a case of coronary thrombosis an acute gallbladder manifestation or as more frequently obtains, an atypical gallbladder attack simulating the syndrome of coronary disease.

From January, 1920, to June, 1937, 5,000 consecutive cases of gallbladder disease were analyzed by Drs HEYD, CARTER, and HÖRZ. Of these 3,986 were operated upon by 53 different surgeons, 50% of the number of the operated cases were private and 50% were so-called clinic patients. In these

3,986 operated cases there were 309 deaths from any cause whatsoever, giving a basic hospital gallbladder mortality of 7.7% (Table I). Thus general figure of 7 to 8%

TABLE I—ANALYSIS OF 3 986 CONSECUTIVE OPERATIONS ON THE BILIARY TRACT (1920-1937)

Operation	Total Number	Mortality (No)	Mortality (Per Cent)
Chronic Cholecystitis	3 240	190	5.8
Cholecystectomy			
Alone or with appendectomy	2 438	88	3.61
With dochoostomy	238	27	11.34
With other operation	568	74	13.03
Cholecystectomy with dochoostomy and other operations	6	1	16.16
Cholecystostomy	66	22	33.3
Alone or with appendectomy	43	13	30.24
With dochoostomy	16	6	37.50
With other operation	7	3	42.86
Total	3,306	212	6.40
Obstructive Biliary Disease			
Cholecystogastrostomy	52	15	28.8
Choledochostomy only	37	13	35.1
Choledochostomy with other operations	2	2	100.0
Plastic on ducts	5	3	60.0
Total obstructive	96	33	34.4
Acute Cholecystitis			
Cholecystectomy	517	45	8.82
Alone or with appendectomy	428	32	7.47
With dochoostomy	89	13	14.60
Cholecystostomy	45	13	28.80
With dochoostomy	9	3	33.33
Total cholecystostomy (with 3 other operations)	57	18	29.63
Total acute cholecystitis	574	64	10.97
Total for all biliary tract operations	3,986	309	7.7

mortality is in general accord with other reports covering a like period of time and approaching it in numbers. In the "break up" of this operative material a number of significant facts emerged. The clinical and mortuary impact of these statistics is arresting and resulted in some significant deductions in regard to diagnosis, pre-operative treatment, operative technique, postoperative treatment and the eventual curability and morbidity of the surviving patients.

Seriatim, we may consider a few of the most outstanding features of the study.

1 THE CONTINUOUS AND PROGRESSIVE CHARACTER OF ALL INFECTIONS OF THE GALLBLADDER. It became apparent that disease of the gallbladder does not spontaneously

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"cure" itself but from the very nature of the disease is a continuous, pathological process with a high degree of cyclic periodicity in symptoms. This inherently progressive course of gallbladder disease involves in chronological order the gallbladder, cystic duct, the common duct, the liver, the pancreas, and finally affects the entire organism. This pattern of continuous and progressive change varied, to be sure, but in the main the evolution of symptoms was dependent upon chronicity, the constitutional habitus of the individual and the inherent degree of infectivity, plus the mechanical factor of obstruction in the ducts from either inflammation or calculous formation. With chronicity, the number and severity of the symptoms increased, the technical difficulties of surgical intervention became greater, and the mortality rate invariably rose. For example, there were 1,270 operations on patients with symptoms of chronic cholecystitis of less than two years' duration. Nine hundred and fifty-nine of these operations were uncomplicated, with 13 deaths, or a mortality of 1.38%. However, in the same group there were 311 patients with complications, individuals who had a history of a previous acute attack, or the gallbladder surgery was complicated by some additional surgical procedure. Twenty-two of these patients died, giving a mortality of 7.10% (Table II).

TABLE II—AN ANALYSIS OF THE RESULTS OF OPERATION IN CHRONIC CHOLECYSTITIS WHEN DEFINITE SYMPTOMS HAVE BEEN PRESENT LESS THAN TWO YEARS

	No	Deaths	Per Cent Mortality
Uncomplicated cases	959	13	1.35
Complicated*	311	22	7.10
Total operations	1,270	35	2.75

Causes of Death		Major Complications	
Pneumonia	11	Wound infections (severe)	23
Peritonitis	10	Dehiscence	15
Liver death	4	Pneumonia	8
Cardiac failure	4	Thrombophlebitis	5
Operative shock	3	Postoperative hemorrhage	4
Postoperative hemorrhage	2	Pleurisy (effusion)	3
Uremia	1	Cardiac failure	3
		Surgical erysipelas	1
		Peritonitis	1
		Acute parotitis	1

\* Those with previous acute attacks or with secondary operations

It is a generally held opinion that stones in the common duct are sequential to calculi in the gallbladder. Stones in the common duct were found in 6% without any calculi being present in the gallbladder. It is, however, easy to conceive that an infection of the

gallbladder may, by reason of mucosal conditions, not produce gallstones within the gallbladder, but by constant bathing of the common duct with infectious material produce "de novo" calculi in the common duct.

Cholecholestomy was performed simultaneously with cholecystectomy or cholecystostomy for chronic gallbladder disease in 260 patients, and calculi in the common duct were found in 82% of these patients, and in 3,306 operations for chronic cholecystitis the common duct was explored in 77%. According to the report of the pathologist associated "pathological changes in the common duct were almost invariably associated with severe pathological changes in the gallbladder." The statement validates the assumption that common duct disease is usually secondary to gallbladder disease. Symptoms of gallbladder disease in patients with common duct calculi provide a rather interesting observation as to the duration of symptoms and mortality. There were 1,270 patients with symptoms of gallbladder disease of less than two years. Twenty-four had stones in the common duct, representing a percentage of common duct stones of 1.9. In other words, in any group of individuals with gallbladder symptoms of approximately two years' duration at least, 2% will have common duct stones. There were 1,020 patients with symptoms of gallbladder disease from two to 10 years. Ninety-two had common duct stones and the percentage of common duct stones rose to nine. In 610 patients with gallbladder symptoms of from 10 to 35 years, 97 had common duct stones and the percentage of common duct stones rose to 16 (Table III).

TABLE III—DURATION OF CHOLECYSTITIS SYMPTOMS IN COMMON DUCT STONE  
Duration of Symptoms

	Total Cases	Common Duct No Cases	Per Cent Common Duct Stone
Under 2 years	1,270	24	1.9
2-10 years	1,020	92	9.0
10-35 years	610	97	16.0

It is interesting that in 574 operations for acute cholecystitis—the diagnosis of acute cholecystitis was entertained only when made by the pathologist—80 patients had common duct stones, an incidence of approximately 14%, and in only three of these patients was there lacking a history of previous gallbladder symptoms. In other words, in the acute gall-

bladder cases approximately 96% had a definite history of chronic gallbladder disease and 80% of all the secondary gallbladder operations followed a cholecystectomy

2 **MULTIPLE SURGERY** About 13% of the operations in women with gallbladder disease were associated with fibroids and nearly 10% of all the series, both male and female, had gastro-duodenal ulceration

It is a rule at the Post-Graduate Hospital to remove the appendix in practically all intra-abdominal operations. The mortality of operations on the gallbladder, with or without appendectomy, showed practically no variation between the two groups. However, when other operations were added to cholecystectomy, the mortality increased rapidly with each type of secondary operation. If there were added to any gallbladder surgery a gastro-enterostomy the mortality became 16 4%, with gastric resection, the mortality rose to 31 1, and with hysterectomy a mortality of 11 8% was obtained. It is obvious that surgical intervention for gallbladder disease is an operative intervention of sufficient magnitude to be the sole and only indication for the surgical intervention (Table IV)

Earlier, I referred to the fact that in this large series 7 7% of the patients had the common duct explored and that stones were

found in 82% of the cases, with a mortality of 11 34. I also stated that four-fifths of secondary operations on the common duct were in patients who had had a cholecystectomy. Choledochostomy following a previous cholecystectomy was done in this series in 39 instances, with a mortality of 40%. Only six of these 39 patients had their original operation at the Post-Graduate Hospital. 33 were done in other hospitals. Of the 39 patients who had common duct operations following a previous cholecystectomy 32 of the group, or 80%, had recurrent overlooked stones. The inference is obvious, that any operation for gallbladder disease should, if and when there is evidence of common duct disease, be completed by exploration of the common duct as part of a single operative procedure.

Considerable controversial gallbladder literature has arisen in the discussion of acute cholecystitis. Like most discussions more heat has been generated than light. We are not inclined to believe that there is any such "immediacy" for surgical intervention in acute gallbladder disease as applies to gastro-intestinal perforations or acute appendicitis. In other words, the term "immediate operation" as opposed to "deferred operation" is a misnomer. Acute cholecystitis—the diagnosis being made only by the pathologist—occurred in 14 5% of the series, whereas the incidence of stones in the gallbladder in chronic cholecystitis was approximately 70%, 89% of the acute cases had calculi in the gallbladder. Undoubtedly the mechanical factor of calculus is a factor of marked importance in initiating the acute phases of cholecystitis. It has been found that the individual with an acute gallbladder who had a hospital residence of from six to 24 hours before operation produced as a group the least mortality in this condition. One hundred and twenty-eight patients were operated within six hours after their admission into the hospital, with a mortality of 16 6%, and this is almost exactly the same mortality of 80 patients whose disease began within 48 hours of their operation, namely 15 10%. Two hundred and ninety-seven patients were prepared pre-operatively from 6 to 24 hours, with a mortality of 7 4%, or within the basic mortality of the entire group 7 7. One hundred and forty-nine other patients were prepared from two days to 24 days, with a mortality of about 13%. Of 316 cases observed 16 hours or longer 57% had a continuous progression of their symptoms and physical findings. In only 12% was there definitely a subsidence of the clinical picture.

TABLE IV — CHRONIC CHOLECYSTITIS  
Factors Influencing the Morbidity and Mortality in Surgery for Chronic Cholecystitis

Factors	No of Cases	Morbidity	Per Cent Mortality
(A) Multiple surgery (Cholecystectomy plus secondary operation)	575	1 72	13 85
1 With gastroenterostomy	128		16 4
2 With pyloroplasty	111		9 9
3 With gastric resection	61		31 1
4 With acute appendix	31		13 0
5 With hysterectomy	59		11 8
(B) Conservative treatment in acute cholecystitis			
1 Subdud acute	474	1 59	11 02
2 With chronic abscess or old perforation into colon	46	2 20	38 0
3 Cholecystostomy in previous acute	15	1 58	20 0
(C) Cholecystostomy in chronic*	63	1 50	7 4
(D) Jaundice (especially necessitating common duct surgery)	254		13 0
(E) Delay in surgery for chronic cholecystic symptoms. Series with less than two years history	959		1 35
Total series of chronic cholecystitis	3,303	1 31	8 4

\*Means cholecystostomy for a previous chronic infection—now followed by a cholecystectomy

Jaundice is rightly believed to indicate chronicity of disease of the 574 acute cases a definite history of jaundice was present in 101, with a 15 8% mortality and jaundice was present at the time of operation in 155 patients, with a 20% mortality In other words, the history of jaundice increases the mortality expectation over 100% and jaundice at the time of operation increases the mortality expectation 200% (Table V)

TABLE V—ACUTE CHOLECYSTITIS  
Factors Influencing the Mortality and the Morbidity in Surgery in Acute Cholecystitis

B Degree of Pathology (Attending Pathologist's Diagnosis)		
Factors	No of Cases	Mortality
(1) Acute cholecystitis	206	5 85%
(2) Purulent cholecystitis	117	9 40%
(3) Gangrenous cholecystitis	150	7 33%
(4) Perforated, with abscess	10	0 00
(5) Perforated with peritonitis*	51	35 85%
B Complicated Cholecystitis (Comparison with Acute Only)		
(1) Acute only	206	5 85%
(2) Complicated cholecystitis	368	14 10%
(3) Perforated cholecystitis (known)	69	26 10%
C Duration of Present Illness		
(1) Operated within 48 hours of onset	81	11 10%
(2) Between 48-96 hours (2-4 days)	137	5 90%
(3) Between 4-7 days	104	7 70%
(4) Between 7-50 days	182	16 71%
D Duration of the Period of Hospital Observation Pre-Operative		
(1) 0-6 hours	128	15 62%
(2) 6-24 hours	297	7 41%
(3) 24-48 hours	58	10 35%
(4) 2-24 days	91	17 59%
E Jaundice		
(1) Definite history of jaundice (past)	101	15 80%
(2) Jaundice at time of surgery	155	20 60%

\* Exclusive of 16 cases with clinical peritonitis where cholecystostomy was done

Finally, the cyclic character of gallbladder disease is indicated in a consideration of Table VI The pathologist divided his material

TABLE VI—THE CYCLE OF ACUTE GALLBLADDER DISEASE  
(As seen in 574 pathologically acute gallbladders)

Clinical Course Pathological Equivalent	Single Acute Attack—No Definite History of Previous Cholecystitis			
	Acute	Purulent	Gangrenous	Perforated
No of cases in each group	51	25	42	23
Mortality per cent	3 9%	4 0%	4 8%	26%
Clinical Course Equivalent Pathological	History of One or More Acute Attacks or a History of Chronic Cholecystitis			
	Chronic or Acute	Purulent	Gangrenous	Perforated
No of cases in each group	155	92	108	48
Mortality per cent	6 4%	10 7%	8 3%	33 7%

from the 574 cases of so-called acute cholecystitis into acute, purulent, gangrenous, or perforated The mortality in the first three of these categories, "following a single acute attack, with no definite history of a previous cholecystitis," is well within the mortality rates of simple, uncomplicated cholecystectomy, namely 3 to 5% However, in 401 cases of acute cholecystitis (in 34 similar cases no pathological tissue was obtained) with a history of one or more acute attacks or a definite history of previous chronic cholecystitis, the operative mortality was approximated double in each of the categories—acute, purulent, and gangrenous cholecystitis

# MOTHERHOOD MADE SAFER

More important than the elimination of much of the pain and discomfort formerly associated with pregnancy is the removal of many of the hazards of the event as a result of increased knowledge of infection and its control, of the physical changes that take place in the human body, and of medicine generally, *Hygeia, The Health Magazine*, says in the May issue

"The chief causes of death in childbirth and pregnancy are first, infections, second, the intoxication which is called toxemia of pregnancy, third, hemorrhage and shock," the editorial continues "The intensive research now being carried on in various parts of the country to control these specific factors should yield great dividends in lives saved in the years to come"

*Hygeia* points out that fundamental in lowering still further the possibility of death in childbirth is education Dr Nicholson J Eastman of Johns Hopkins University has listed symptoms which give warning of hazards during the period before birth. These symptoms, which require immediate report to the physician, are (1) bleeding of the organs involved in childbirth,

(2) swelling of the face or fingers, (3) severe continuous headache, (4) dullness or blurring of vision, (5) pain in the abdomen, (6) persistent vomiting, (7) chills and fever, and (8) sudden escape of the fluid in which the child is carried.

"Whenever any of these signs or symptoms occur the physician should be called immediately," the editorial warns "Unquestionably, this in itself would save many a mother and many a child."

The desirability of having births take place in hospitals rather than in homes is emphasized "There are many who still believe that it is safer for the baby to be born at home," the editorial declares "Under proper conditions, this is undoubtedly true However, the possibility of securing such proper conditions in the home is slight compared with the possibility of securing suitable conditions in the hospital

"However, the fact that there were just slightly over 9,000 maternal deaths in more than 1,250,000 live births is an indication of the tremendous advance made by scientific medicine in this field"

# Case Report

## TYPHOID CARRIER WITH BACILLUS TYPHOSUS BACTEREMIA ACCOMPANYING AN ACUTE EXACERBATION OF A CHRONIC CHOLECYSTITIS

EMIL VERRILLI, M D , Mamaroneck, New York, and EDWARD A. LANE, M D , White Plains, New York

THE accidental discovery of a chronic typhoid carrier with a *Bacillus typhosus* bacteremia accompanying an acute exacerbation of a chronic cholecystitis appears to be of sufficient rarity and interest to warrant reporting. A perusal of the *Quarterly Cumulative Index Medicus* under the headings of "typhoid carrier" and "cholecystitis" for the past ten years failed to disclose any references to the associated conditions in question.

### Case Report

The patient, a white man, aged 55, was taken acutely ill (April 1, 1940) with what was at first thought to be pneumonia. There were chills and fever (103.6 F) and pain in the upper right side of the abdomen which might have been referred from the pulmonary region, accompanied by acceleration of the pulse (124) and respiration (32). The lungs showed questionable dullness at the right base, with many moist, crepitant rales over this area but no change in voice or breath sounds. The abdomen was soft and oose with slight tenderness under the right costal arch. The liver and spleen were not enlarged and no masses were felt. Both hands and feet were deformed from arthritis deformans. Blood count (April 3) showed 20,000 white blood cells with 90 per cent polymorphonuclear cells.

In the absence of a productive cough and sputum, a blood specimen was examined (April 6) for possible isolation and typing of pneumococci. An organism was isolated that proved to be *B. typhosus*. Meanwhile the temperature that had subsided after six days of fever, ranging from 101 to 105 F, flared up again on two occasions during the ensuing two weeks (April 17 and 21).

The history relevant to the current illness disclosed the fact the patient had had typhoid fever thirty-six years previously while attending college in New England. A high-grade hearing defect dates from that illness. Twice since then he has suffered from attacks similar to, but not as severe as, the recent one. The first occurred twenty-four years ago and the second, eight years ago. On both of these occasions, contrary to the recent attack, he became jaundiced. He has suffered from arthritis for the past twenty-six years and has had diabetes for at least two years.

In view of the evident diagnosis of a cholecystitis of typhoid origin, a series of five stool specimens (taken April 14, 19, 21, 26, and May 1) were examined, and all were found to contain *B. typhosus*. Cholecystectomy was advised as soon as the patient's condition warranted it, both to relieve him of the chronic cholecystitis and, if possible, to free him of his typhoid carrier condition. Following a period of normal temperature

during which the blood count fell to 8,000 white blood cells with 67 per cent polymorphonuclears, the blood gave a sterile culture and the urine was rendered sugar-free, the patient's gallbladder was removed on May 3.

At operation (performed by Dr. J. V. Hibbard), an advanced, suppurative, inflammatory condition was found involving the gallbladder, under surface of the liver, and adjacent omentum. The gallbladder contained one large, greenish black stone measuring 75 by 25 by 25 mm (Fig. 1). The region of the common duct, hepatic artery, and portal vein was occupied by a mass of induration in which the common duct could not be identified. The gallbladder and stone were removed, and the abdominal wound was closed with drainage.

Following operation, laboratory examinations showed the presence of *B. typhosus* in the gallbladder, in a culture from the drainage taken eleven days after operation, and in repeated stool specimens, the most recent of which was taken almost two months after operation. It is evident, therefore, that removal of the gallbladder has not eliminated the carrier condition in this case.

Dr. Margaret Loder, pathologist at the United Hospital, Port Chester, where the operation was performed, reported that the gallstone removed from this patient is the largest that has been obtained thus far at that hospital.

### Summary

A patient with an acute exacerbation of a chronic cholecystitis was discovered to have a *B. typhosus* bacteremia.

He has evidently been a typhoid carrier for the past thirty-six years, during which time he has not infected any family contacts or anyone outside the family as far as is known.

Removal of the gallbladder has failed to cure the typhoid carrier condition.

A gallstone of unusual size was removed with the gallbladder.

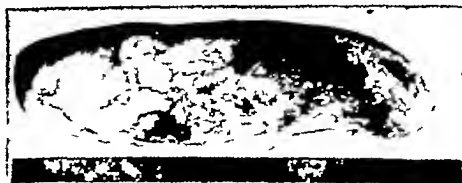


FIG 1 Full stone, size 75 by 25 by 25 mm

# Therapeutics

## CONFERENCES ON THERAPY

THESE are stenographic reports, slightly edited, of conferences by the members of the Departments of Pharmacology and of Medicine of Cornell University Medical College and the New York Hospital, with collaboration of other departments and institutions. The questions and discussions involve participation by members of the staff of the college and hospital, students, and visitors. The next report will appear in the July 1 issue and will concern "The Use of Vitamin B Fractions."

### The Uses of Adrenal Cortical Hormones

DR EUGENE F DuBois Two years ago Dr Robert F Loeb of the College of Physicians and Surgeons spoke to us about Addison's disease and its treatment. We are fortunate that today he is to continue on the subject of the uses of adrenal cortical hormones.

DR ROBERT F LOEB I told Dr DuBois that in my opinion adrenal cortical hormones are used in three categories of patients: first, those with demonstrable adrenal insufficiency, second, those with equivocal adrenal insufficiency, and third, those without adrenal insufficiency. Now I should venture to guess that infinitely more is used in patients without adrenal insufficiency than in patients with adrenal insufficiency. I also told Dr DuBois that I feel only moderately secure in talking about adrenal hormone therapy in demonstrable cortical insufficiency. I also feel insecure in talking about adrenal hormones in the treatment of equivocal adrenal insufficiency, and I find it requires faith to talk about the value of hormones when adrenal insufficiency in all probability is not present.

I should like, if you will bear with me, to start out by reviewing briefly some of the disturbances known to be present in demonstrable adrenal insufficiency. These fall, without question, into two categories and possibly into a third. The first group of disturbances which is unequivocal and which is readily demonstrable in adrenalectomized animals and in patients with adrenal insufficiency, that is, Addison's disease, is the group of disturbances associated with abnormalities in the behavior of electrolytes and water. As you know, there is a definite increased excretion of sodium in adrenal insufficiency. With this there is also loss of water, which is reflected in the plasma volume and to some extent in the interstitial compartment. There is also associated, although less regularly, an increase in the potassium

concentration in the serum and, perhaps, increased potassium concentration in the tissues themselves. There is also a series of disturbances of renal function as characterized by nitrogen retention in advanced insufficiency in man and in earlier insufficiency in animals. Associated with this is a decrease in urea clearance and also a decrease in the ammonia excretion by the kidney. How many of these changes in renal function can be attributed to decreased plasma volume and to decreased blood flow we do not know. However, these are certainly factors of prime importance. Whether there are specific changes in the renal tubule cells which are also responsible for these changes in renal function, as there probably are in relation to sodium and potassium disturbances, we do not know. This all is included in one category of disturbances, and I think that this category of disturbances is, in part anyway, also responsible for hypotension, which is another characteristic of adrenal insufficiency. Whether any other factors have to do with hypotension in adrenal insufficiency we do not know. I have a feeling there may be, and I will come to that in a moment.

The second category of demonstrable physiologic disturbances in adrenal insufficiency includes those related to carbohydrate metabolism.

In 1909 Porges first demonstrated hypoglycemia in patients with adrenal disease. At that time the hypoglycemia was thought to be due to disturbances in the adrenal medulla. More recently, Britton and Sylvette fought a battle against all comers when they suggested that the adrenal cortex was important in controlling the carbohydrate metabolism. Finally, they have been completely substantiated in their contention by the studies of Long and his co-workers, by the studies of Kendall and others at the Mayo Clinic, and by Thorn and his associates in Baltimore. We know that a fair percentage of patients with

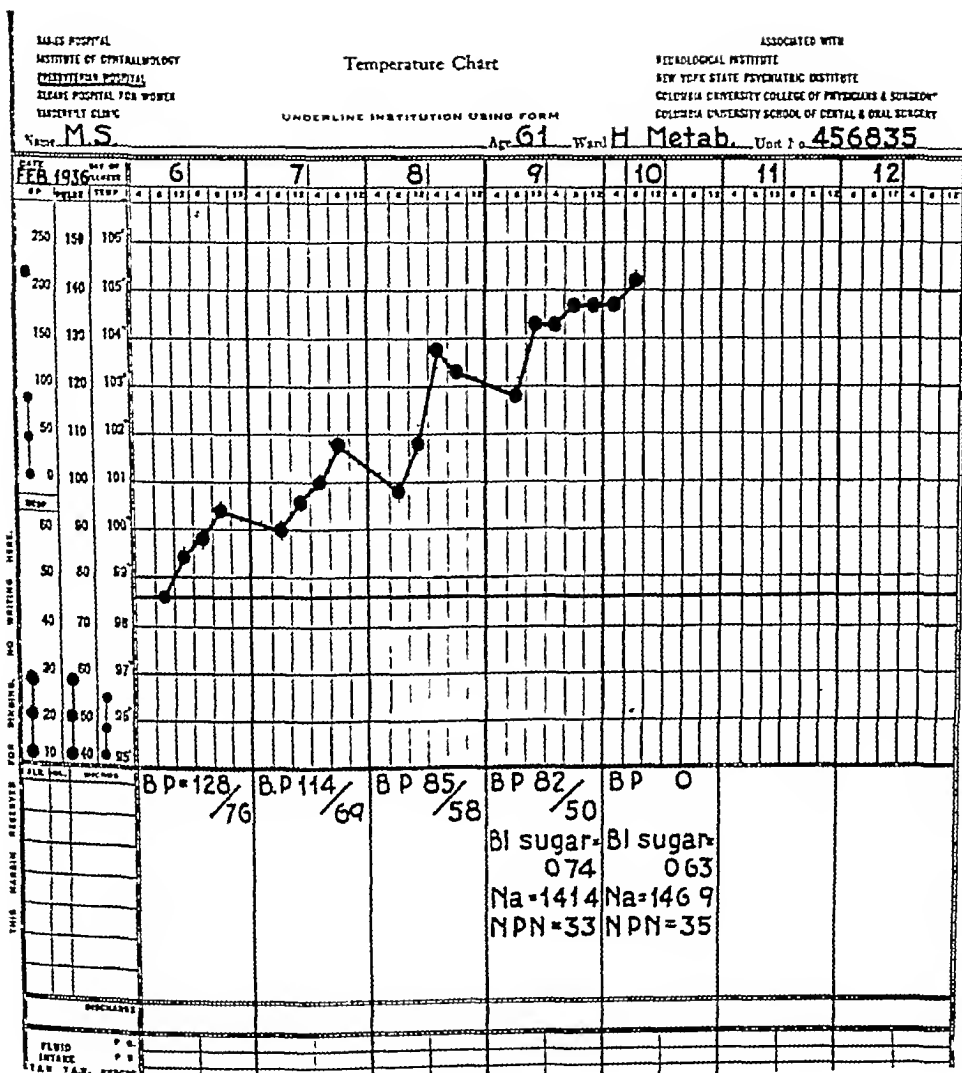


Fig 1

demonstrable adrenal insufficiency undergo severe hypoglycemic shock, spontaneously, I might add. Furthermore, we know that patients with demonstrable adrenal insufficiency have focal and diffuse neurologic signs which at times, at least in part, may be ascribed to hypoglycemia and which, perhaps, may also in part be ascribed to decreased cerebral blood flow. Whether a third factor enters into the neurologic manifestations we do not know. We know that patients with Addison's disease are unusually sensitive to insulin injection, which again suggests a disturbance in carbohydrate metabolism. In animals the changes in carbohydrate metabo-

lism are readily demonstrated. We know from the work of Kendall that the administration of certain adrenal hormones increases the excretion of sugar, not only in phlorhizimized animals but in partially pancreatectomized animals. The same hormones increase nitrogen excretion, indicating that they increase gluconeogenesis. They also increase glycogen storage in the liver of normal rats and mice as shown by Long. So you see we have considerable evidence of a significant part played by the adrenal cortical hormones in carbohydrate metabolism, particularly as seen in the lower animals. Whether or not these are all secondary to decreased protein

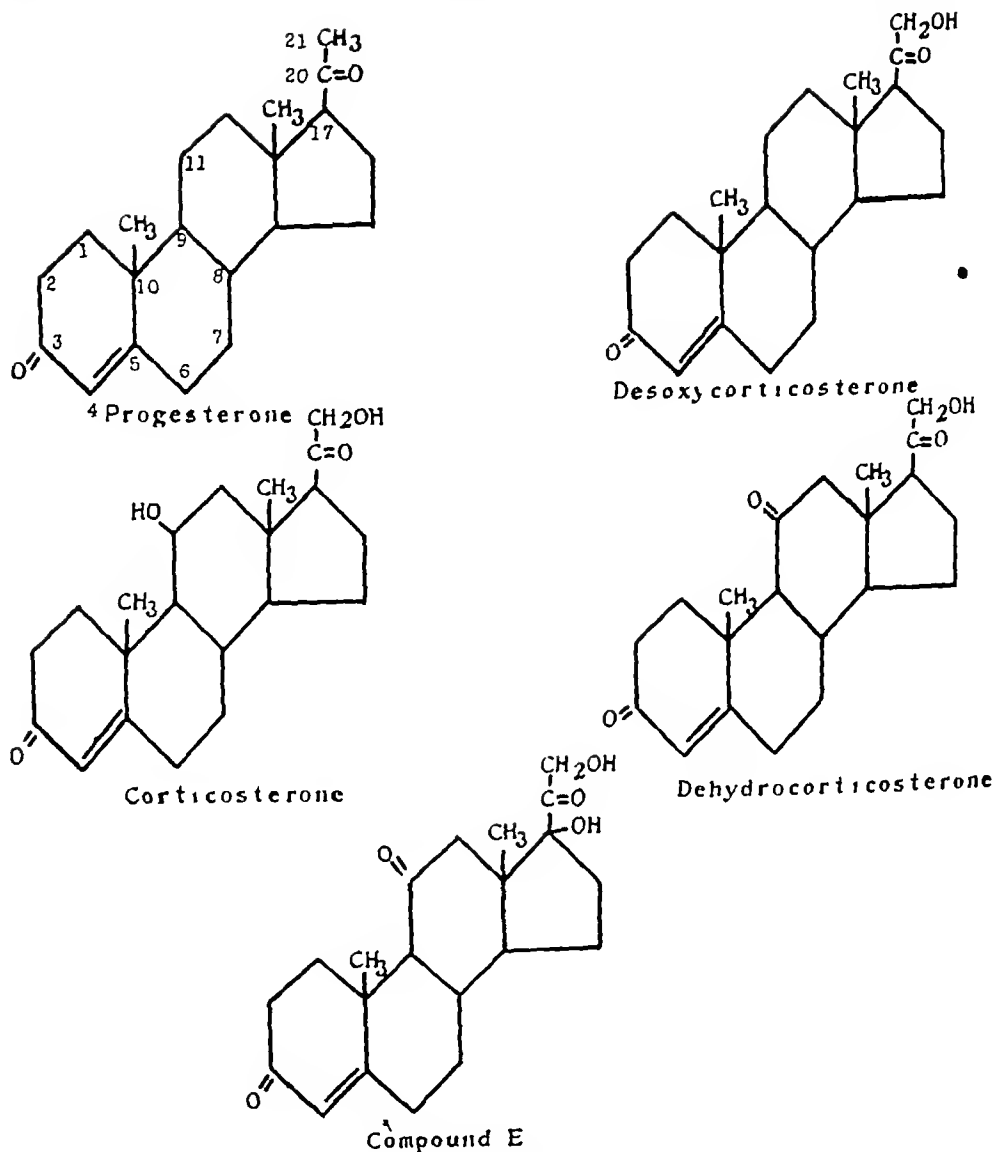


FIG 2 Modified from Kendall

breakdown in adrenal insufficiency, as suggested by Long, we do not know.

We also know from the work of Ingle that certain cortical hormones, those that are effective in influencing carbohydrate metabolism, have a definite effect on the work capacity of adrenalectomized rats. On the other hand, we know that the hormone that affects the salt and water metabolism has relatively little effect on the work capacity of adrenalectomized animals, although this one hormone has a striking life-maintenance activity.

There are, then, two definite groups of disturbances demonstrable in adrenal insufficiency. There is possibly a third type of disturbance, and I should like now to discuss this briefly on the basis of human observations (Fig 1).

A certain number of patients with Addison's disease, of which this record is representative, die what I believe to be an Addisonian death, characterized by a falling blood pressure, by a soft pulse, and by profound asthenia. These changes are not related to the state of the electrolyte and water metabolism.

# EFFECT OF TEN DAYS TREATMENT WITH DESOXYCORTICOSTERONE PROPIONATE

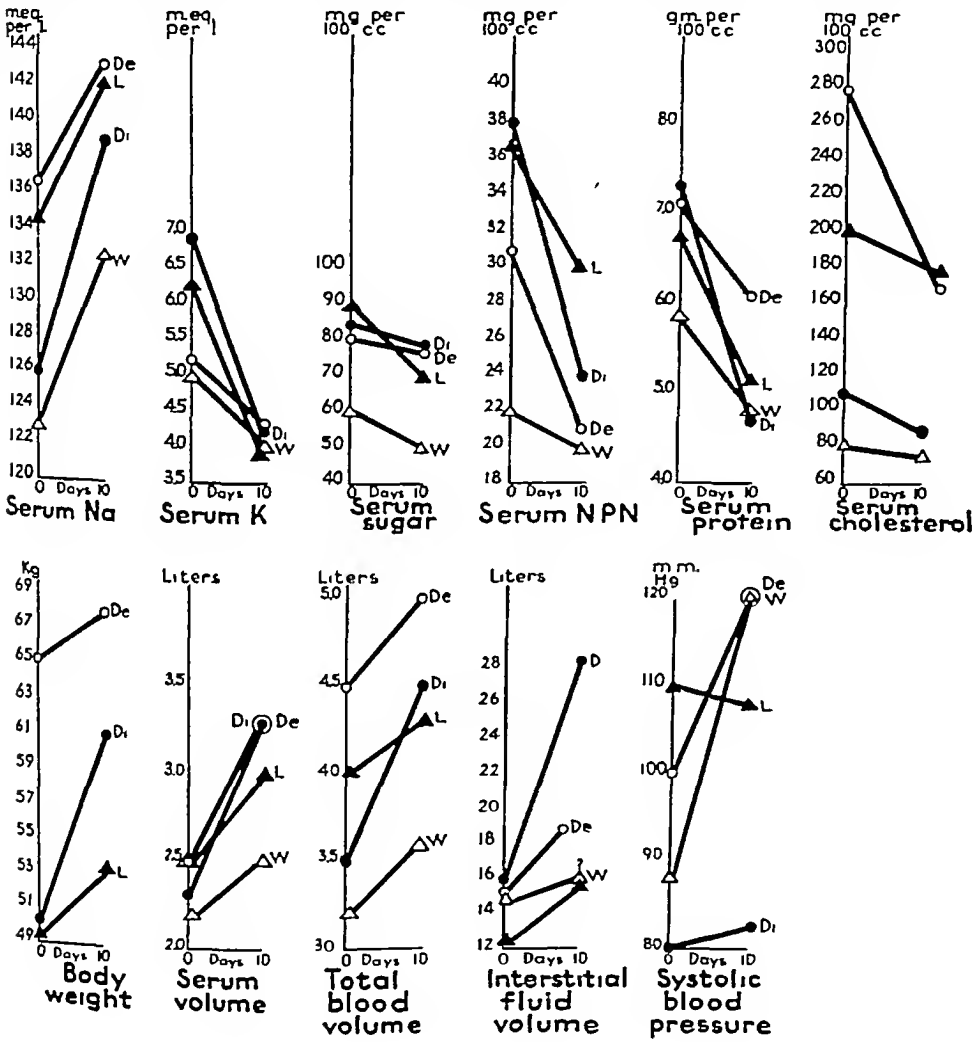


FIG 3

and are apparently unrelated to the level of the blood sugar. Furthermore, these patients at times fail to respond to what may be considered adequate therapy with active hormonal substances as gaged by the effects on the water content of the blood, the electrolyte content of the blood, and, as I have said, the maintenance of blood sugar. These patients, then, die Addisonian deaths, usually associated with a terminal rise in fever and with a sharp decrease in blood pressure but without the chemical changes mentioned. Whether these

patients suffer from a disturbance of their peripheral blood vessels on a local basis or whether they suffer from a central disturbance of their vasomotor apparatus I do not know, but that they do suffer from a disturbance of the vasomotor apparatus seems fairly certain. I think that it is important to bear this in mind, because, if we close our eyes to possibilities other than the effects on water and salt and carbohydrate metabolism, we may miss an important aspect of adrenal insufficiency. I have talked thus far about the disturb-

Fasting blood  
serum levels

Na meq/l	Protein %	Glucose mg %
142	7.5	90
140	6.5	80
138	5.5	70
136	5.0	60
	K meq/l	
	4.0	

Daily urinary  
excretion

Na meq	K meq	N <sub>2</sub> gms
100	100	100
90	90	90
80	80	80
70	70	70
60	60	60
50	50	50
40	40	40
30	30	30
20	20	20
10	10	10

Daily dose  
mg or cc

25
20
15
10
5
0

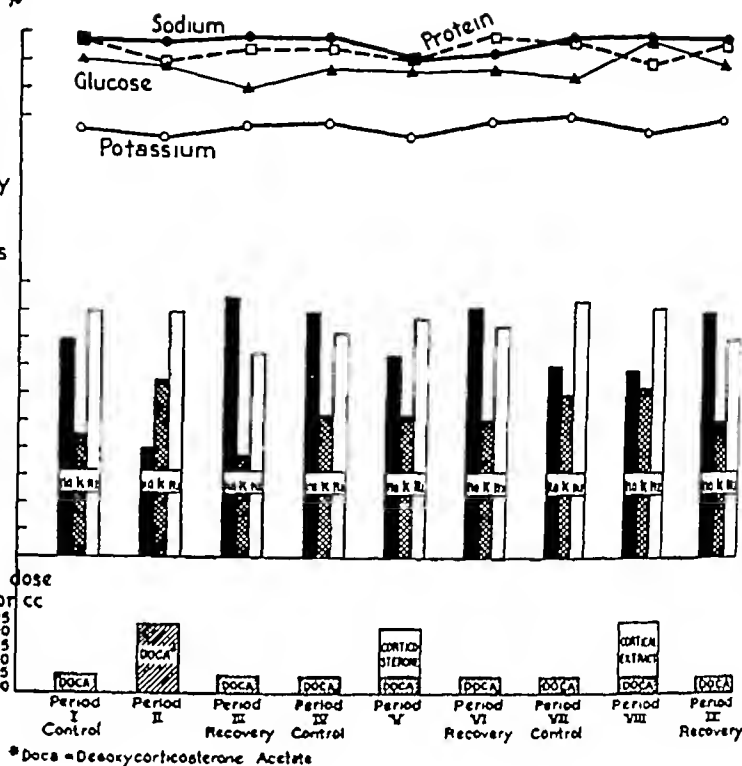


FIG 4

ances that are present in demonstrable insufficiency. We should like to know what we can anticipate in the treatment of demonstrable human adrenal insufficiency with adrenal hormone. That brings us to the first question—namely, what hormones have we available?

Isolated from the adrenal cortex are approximately twenty steroids, four of which have a great similarity with the exception of one or two oxygen atoms. The nature of the activity of these different steroids is dependent on whether or not these extra oxygen atoms are present and where they are in the molecule. There has been isolated from the adrenal cortex, as you may note in Fig 2, one of the steroids, desoxycorticosterone, which is strikingly effective in relation to salt and water metabolism. This has not only been isolated but has been synthesized by Reichstein and is available commercially. Desoxycorticosterone in man, and probably in ani-

mals, has either no, or minimal, effects on the carbohydrate metabolism. Some of the other steroids which have been isolated from the cortex are corticosterone, dehydrocorticosterone, and what is known as compound "E" of Kendall. These have been isolated in small amounts, are not available for commercial use, and to my knowledge have not yet been synthesized. These substances have relatively little effect on salt and water metabolism but have definite effects on carbohydrate metabolism, the one having the greatest effect being this compound "E" of Kendall, which is 11-dehydro-17-hydroxycorticosterone. We have available for treatment only one steroid and that is desoxycorticosterone, which, as I have stated, has purely salt and water activity.

Most patients with Addison's disease require desoxycorticosterone, but we have 3 or 4 who cannot be persuaded to take desoxycorticosterone because they are perfectly comfortable with the oral administration of

sodium chloride alone. The desoxycorticosterone can be given either parenterally by injection or in pellet form. Most patients who are not suffering from active tuberculosis return to some type of work or gainful occupation. I think that this hormone marks a great advance in the treatment of Addison's disease—that is, demonstrable adrenal insufficiency.

Fig 3 merely summarizes in a series of patients with Addison's disease what can be accomplished with desoxycorticosterone. You will note that the blood sodium increases and the potassium decreases, the nonprotein nitrogen decreases, the serum protein decreases, and the body weight increases. The blood volume, the plasma volume, the interstitial fluid volume also increase and, in time, the blood pressure, although the blood pressure rises are relatively late.

One should bear in mind that toxic reactions result from excessive doses of desoxycorticosterone in Addisonian patients.

I may say a few words about the effects of other hormone preparations in man. Fig 4 compares the effects of desoxycorticosterone with other preparations in a patient with Addison's disease. This patient was maintained in good condition on a standard regimen with a daily dose of 6 mg of desoxycorticosterone throughout the period of study. The levels of excretion of sodium, potassium, and nitrogen in the control period are apparent. You will note that when we added 20 mg of desoxycorticosterone daily over the usual ration there was a striking decrease in sodium excretion with a definite increase in potassium excretion. In the same study during one period of observation of five days, the effects of an average daily dose of 18 mg of corticosterone\* were noted in contrast to 25 mg of desoxycorticosterone. It is apparent from this record that the effect on sodium excretion, which was marked with desoxycorticosterone, was insignificant in the case of corticosterone. Perhaps there was a slight increase in potassium excretion. Then we compared the effect of desoxycorticosterone with a potent cortical extract. In addition to the maintenance dose of desoxycorticosterone, 25 cc of this cortical extract was given daily over a period of five days. Again, one may see the difference in effect between the desoxycorticosterone and the cortical extract on the excretion of sodium. There is virtually no decrease in sodium ex-

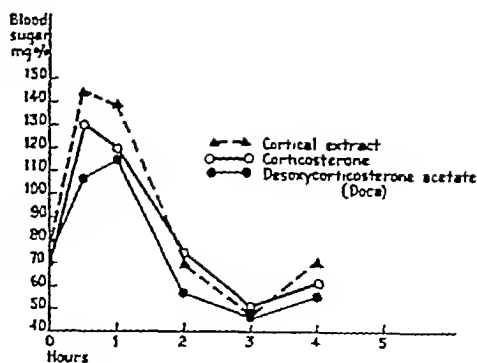


FIG 5

cretion and little, if any, increase in potassium excretion with 25 cc of the cortical extract a day. Corticosterone, which is known to be active in its effects on carbohydrate metabolism in animals, has virtually no effect on the salt and water metabolism in the controlled Addisonian patient, and 25 cc of the cortical extract likewise has a minimal effect on the electrolytes and water. Desoxycorticosterone, the one pure hormone that is available for patients, has, on the other hand, a striking effect on salt and water metabolism.

In this study we also observed the effect of desoxycorticosterone, of corticosterone, and of cortical extract on blood sugar curves. These curves are fairly comparable because the patient ate identical meals over a period of many weeks. In the record of Fig 5 I think you will see that at the end of three hours the blood sugar fell to approximately 50 mg per hundred cubic centimeters, regardless of whether he had had cortical extract, corticosterone, which is supposedly carbohydrate active, or desoxycorticosterone in large doses for five days before the glucose tolerance test. In the first part of the curve there is perhaps some increase in the blood sugar level after the administration of corticosterone and cortical extract. That would be negligible certainly were it not in accord with what is observed in animals, although I think it is safe to say that the effect on carbohydrates obtained by 25 cc of cortical extract a day, or by 18 mg of corticosterone a day, is not worth anything from a practical standpoint in preventing hypoglycemia or in elevating the blood sugar. Thorn has made similar studies comparing the effects of corticosterone and Kendall's compound "E" with desoxycorticosterone. Thorn gave 85 mg of corticosterone in one dose and obtained a definite effect, more striking than ours. He also ob-

\* Corticosterone, desoxycorticosterone, and cortical extract were obtained from the Roche-Organon Laboratories.

tained an effect on the respiratory quotient which we failed to obtain with either corticosterone or cortical extract in the dosage we used. Compound "E" of Kendall showed still more striking effects on the carbohydrate metabolism in Thorn's experiment with a dose of 30 mg.

As I have said, these two steroids are not available commercially. The amounts necessary to produce any effects in man are enormous. So I think we can say with relative certainty that the clinical effects of the cortical hormones, other than desoxycorticosterone, are minimal and, even with as much as 25 cc of cortical extracts daily, the effect on the salt and water metabolism is small. So much for what can be accomplished with the various hormones in the treatment of demonstrable adrenal insufficiency.

I should like now to turn briefly to our second category of patients—namely, those with equivocal insufficiency. The literature today is full of recommendations for the use of cortical materials in the treatment of patients who feel tired, who have low blood pressures, who have poor appetites, who also have severe acute infections, and who may at times have low blood sugar curves—for instance, the patients with sprue. These symptoms are similar to those seen in adrenal insufficiency. How specific they are, however, I think is uncertain. My feeling is that they are non-specific, and to state that these symptoms are manifestations of adrenal insufficiency in these patients is unjustified.

There are two pieces of work which perhaps give some support to those who use the cortical hormone in treating tired women and men, too. One of these is Ingle's observation on the effect of work on the size of the adrenal glands. Ingle has shown that continued hard physical work on the part of a rat increases the size of the adrenal glands in the course of a few hours. Perhaps it is fair to assume that if the adrenal glands enlarge in the course of a few hours they do so because they have had increased work to do. The other piece of evidence is that of Weil and Browne, who have shown that patients subjected to physical stress, the stress of surgical anesthesia, or the stress of acute infections excrete, in their urine, substances that will protect young adrenalectomized rats from the devastating effects of cold. Studies show that adrenalectomized rats put in the icebox die quickly, and Weil and Browne have shown that the urine from people under stress, as I have said, contains substances that will protect these rats, as

does cortical hormone, from dying in the icebox and that urine from people without any demonstrable stress contains no such substances. They have not demonstrated that these protective substances are chemically related to the cortical hormones.

I have considerable doubt about the application of these observations. I personally dislike therapy not soundly supported.

In this same equivocal category of patients under stress comes the much-discussed problem of surgical shock. I believe that Dr Swingle was the first one to point out, or suggest, that cortical adrenal insufficiency was the cause of shock. His paper, which appeared in *Science* in January, 1933, called forth pretty serious criticism and I think, in part, on just grounds. I believe Dr Heuer and Dr Andrus here at Cornell were among the first to produce evidence suggesting that simultaneous injection of cortical extract and blood would prevent the shock resulting from the effects of toxic substances obtained from an obstructed loop of gut better than would transfusion alone. I do not know whether that work has been extended or what the attitude of the group here is toward that work at the present time.

Since then, many others have shown by one means or another that in shock there is apparently some beneficial effect, both in its prevention and perhaps in its treatment, from the use of cortical hormones of various types. Perla's work last year gave another impetus to the use of cortical hormones. We have recently tried to repeat some of the experiments, but we were unsuccessful. We discovered that inducing histamine shock in the rat, as Perla did, required more than  $1\frac{1}{2}$  Gm of histamine per rat. A considerable variation in absorption might give misleading results with regard to protection. It was also not clear whether the slight apparent influence of the hormone might not be attributed to some further increase in salt and water retention as a result of desoxycorticosterone rather than to any more specific effect. Similar criticism can be applied to all, or almost all, the studies on shock and cortical hormone. It is my belief that it has not been convincingly demonstrated that cortical hormone has a specific effect or even, perhaps, any greater effect than would be obtained by a slightly larger injection of saline.

For the treatment of shock in man, Dr Scudder at the Presbyterian Hospital and others have emphasized the importance of cortical hormone with saline infusions, the

two being used together. Their results must be termed impressionistic. This is not said as a criticism beyond the fact that I desire to stress—namely, that I do not believe it has yet been proved that cortical hormone has any great advantage in the treatment of surgical shock.

Before closing I should like to say a word about the treatment of conditions that are, in all probability, not due to adrenal cortical insufficiency. You will find in the literature of recent months that cortical hormone is good for Paget's disease, myasthenia gravis, bromidism, and other disease states, and, if you will read those articles critically, you will find that the basis for the claims of success is questionable. Moehlig reported striking subjective benefit from desoxycorticosterone in a patient with myasthenia gravis. In 1 patient we attempted to confirm these observations. We have controlled electrolyte studies on the blood, and on two occasions we gave 5 mg of synthetic hormone daily for a period of five days, at which time the hormone was discontinued because of increase in symptoms to a point beyond which we did not dare proceed. The hormone given was sufficient on both occasions to induce a gain of more than 2 Kg in weight.

Recently, a most confusing paper by Bondurant and Campbell appeared in the *Journal of the American Medical Association* concerning the treatment of bromidism by means of 5 cc of cortical extract daily. The initial chloride levels in the blood were reported in different patients as varying from 198 to 693 mg per hundred cubic centimeters, a range indicating that errors in chemical technic must have been present. The chemical findings as reported are utterly incredible and the theoretic basis for treatment is wholly unsound. In addition to these criticisms it is most improbable that doses of 5 cc of commercial extract would have any significant influence on sodium or chloride excretion.

I point out these two instances merely to emphasize the fact that adrenal cortical hormone is being indiscriminately and uncritically employed in therapy.

DR DUBOIS: We are now ready for general discussion and questions.

DR C H WHEELER: I should like to ask Dr Loeb whether the use of adrenal cortical hormone or extract in instances of equivocal disease is associated with any risk.

DR LOEB: We know that adrenal cortical extract in relatively small doses and desoxycorticosterone in large doses cause adrenal

atrophy in animals. I do not believe the amounts of hormone administered even by the surgeons are enough to cause any damage to the adrenal glands. I think there is a risk with large doses of desoxycorticosterone, because there is no question but that one may obtain more than the desired retention of salt and water. To me it seems far simpler to give salt and water by vein to the point desired rather than to give desoxycorticosterone. Once this drug is in, it is much more difficult to control salt and water retention. As far as we know, desoxycorticosterone has effects only on salt and water disturbances.

DR HARRY GOLD: Some cases have been severely poisoned, and there have been cases of heart failure with edema caused by it, which I believe you reported, did you not?

DR LOEB: We have had Addisonian patients who have been definitely poisoned with desoxycorticosterone with extraordinary degrees of cardiac insufficiency with pulmonary congestion. Fortunately, it may be impossible to induce these effects in patients who have not had Addison's disease and who have normal hearts. We have not been able to produce cardiac dilatation in normal animals. We have produced diabetes insipidus and a striking periodic paralysis in dogs which is associated with an incredible replacement of potassium in the muscles by sodium, but I think that this is more of pharmacologic than of clinical significance.

STUDENT: Dr Loeb mentioned that there might be some other factor controlling blood pressure in patients besides potassium and sodium. Would he tell us more about that?

DR LOEB: I wish I could. As I have said, we see these patients whose blood pressures fall and Addisonian patients, with demonstrable adrenal insufficiency, who die in the state of peripheral circulatory collapse without the chemical characteristics of adrenal insufficiency.

STUDENT: Have you ever observed an unusually low potassium level in those patients?

DR LOEB: No, those patients have normal potassium levels. Our patients who have had too much desoxycorticosterone will have a low potassium level. I do not believe the low potassium level is the cause of cardiac insufficiency. In our normal dogs we have extremely low levels of potassium in the blood, but cardiac insufficiency does not occur there.

DR WHEELER: Have you ever observed, or has anyone else ever observed, the effect of these substances in familial periodic paralysis?

I wonder if you could induce an attack in them by excessive doses

DR LOEB We have only 2 patients who have real familial periodic paralysis. The blood potassium levels drop spontaneously at intervals, and, consequently, I do not believe it would be possible to tell what you are doing. I should be a little hesitant to use it in those patients because of the fact that they are cured by massive doses of potassium chloride, and I think it is possible that we would accentuate the disease to, perhaps, an unfortunate point if we gave them those substances.

DR McKEEN CATTELL In relation to the use of this material in shock, it seems to me fair to consider the problem with reference to secondary factors that are responsible in part for the development of the syndrome—that is, damage to the capillary walls. There is a certain amount of experimental evidence indicating that these hormones do decrease the permeability. I wonder what you think of that evidence.

DR LOEB Mencken has done some work that suggests that cortical extract decreases permeability. I wish someone would produce more convincing evidence that the hormones we are talking about have a specific capillary action. I have sought for that evidence for several years because of this group of patients. I showed you who die because of peripheral collapse without any salt and water disturbance. As I have said, those patients die despite the administration of as much as 110 cc of cortical hormone in twenty-four hours. Hormone seems to have little if any clinical effect in these cases.

DR GOLD Would I be correct in assuming that in the treatment of a case of Addison's disease you would not use cortical extract?

DR LOEB I think that that is a fair question. In the maintenance of patients I certainly would not use cortical extract. A dose of 25 cc a day may cause a minimal effect on the blood sugar but no effect on the salt and water metabolism comparable with desoxycorticosterone. I cannot see that anything is gained in the practical maintenance of the patients with adrenal insufficiency by means of the extract. Theoretically, cortical extract in huge amounts should be worth more than desoxycorticosterone for the simple reason that it contains at least minute amounts of some of the steroids other than the one that has purely a salt and water effect. From the practical standpoint, I cannot see that it makes much difference, although I will say

that we use both cortical extract and desoxycorticosterone in the treatment of crises. We try not to get too much desoxycorticosterone effect, and we control that by blood serum protein levels. When we think we have given enough to obtain effective dilution, we then give considerable quantities of cortical extract, hoping that we may secure an effect other than that on the salt and water metabolism. I cannot say that our hopes are particularly gratified.

DR WHEELER To what extent are these substances effective by the oral route?

DR LOEB I might report three experiences. First, we gave between five and fifteen dollars' worth of an oral cortical extract daily over a period of many weeks in conjunction with salt and could not tell whether the patient took it or not. That was experience number one. Second, we received a preparation that is put up with vitamin C. We gave this patient 15 of these tablets a day—the producer recommends 3 to 6—and lowered the patient's salt intake from 15 to 5 Gm a day while he was taking the 15 hormone tablets. In the course of three days the treatment precipitated a crisis. The third was a patient who had been advised to take the same preparation and had taken three dollars' worth every week. He came in with real insufficiency, which was alleviated by the administration of salt alone. On the basis of our experience I can say that oral cortical extract therapy has no place. There is no question but that activity can be demonstrated by oral doses in the animal, the ratio of doses by mouth and parenterally is something of the order of between 4 and 10 to 1. Recently, Anderson reported favorable results in treating Addisonian patients by the sublingual instillation of a few drops of desoxycorticosterone acetate dissolved in propylene glycol, one to three times a day. This procedure is distinctly promising, although we have had no experience with it.

DR CATTELL I assume that desoxycorticosterone is one of the materials in the chemical extracts of the cortex. Why then is the effectiveness of the extract so low?

DR LOEB It is a quantitative matter. Desoxycorticosterone is one of the steroids of the adrenal cortex present in the extracts. There are also other noncrystallizable steroids with an even higher effect on salt and water metabolism. The amounts of these potent substances in the usual cortical extracts are simply too small for effective results.

DR DuBois Is there any evidence that

these cortical preparations will be of help in relieving fatigue in the military services?

DR. LOEB Dr. DuBois, I wish I could answer that question—and I think it is a terribly important one to be answered. It seems to me that a proper study, with controlled conditions, would be very much in order to ascertain the answer. All I can say is that on the basis of present observations I know of no real evidence to suggest that the administration of cortical extract would in any way influence a man's effectiveness. However, it should be properly studied.

In conclusion, I should like to state that most of the observations reported from our studies have been carried out by a group working at the Presbyterian Hospital—Drs. J. W. Ferrebee, C. Ragan, D. Parker, and D. W. Atchley.

DR. CATTELL The material presented at this conference concerning the indication for the employment of the hormones of the adrenal cortex in therapeutics permits us to summarize with the simple statement: Only in demonstrable adrenal insufficiency do we have an unequivocal indication for the use of these hormones, and in this condition, as replacement therapy, dramatic therapeutic results may be attained. Doubt was expressed regarding the value of these hormones in states of weakness, low blood pressure, hypoglycemia, etc., where the evidence for adrenal deficiency is equivocal. Their use in peripheral circulatory failure falls into the same class. There is no justification for the employment of this therapy in Paget's disease, myasthenia gravis, bromidism, and other conditions where it has been uncritically recommended.

The disturbances resulting from adrenal insufficiency fall into two or possibly three classes. The first includes changes associated with the behavior of electrolytes and water, including increased excretion of sodium, loss of water which is reflected in a decreased plasma volume, an increase in plasma potassium, and a decreased urea clearance and ammonia excretion by the kidney. Possibly all these effects are secondary to altered kid-

ney function. The second group of disturbances includes those related to carbohydrate metabolism, the chief manifestation of which is hypoglycemia which may give rise to hypoglycemic shock and other nervous manifestations. The patient with adrenal insufficiency has a low sugar tolerance curve and may be unusually sensitive to insulin. The evidence for a third type of disturbance is seen in patients whose blood sugar, electrolyte, and water metabolism have been controlled by replacement therapy but who, nevertheless, die a characteristic Addisonian death, with a low blood pressure and terminal fever.

Approximately twenty steroids have been isolated from the adrenal cortex, but only one, desoxycorticosterone, is available for clinical use. Desoxycorticosterone is strikingly effective in correcting the disturbances in salt and water metabolism of adrenal insufficiency but has practically no effect on carbohydrate metabolism. On the other hand, certain other substances that have been isolated in small amounts and are not available commercially, including corticosterone, dehydrocorticosterone, and 11-hydroxy-17-hydroxycorticosterone, have been shown experimentally to have an effect in improving carbohydrate metabolism but to have little influence on the electrolyte and water balance.

In Addison's disease, desoxycorticosterone, given by daily injection or in pellet form, is effective in causing an increase in blood sodium and a decrease in blood protein, nonprotein nitrogen, and potassium. The blood volume and interstitial fluid volume increase and, in time, also the blood pressure. The patient gains weight and, in the absence of active tuberculosis, is restored to a normal life and occupation. Cortical extracts are not nearly so effective and are, in general, not recommended for maintenance therapy, even though theoretically they should afford more complete replacement. However, in the treatment of crises desoxycorticosterone may be supplemented with cortical extract in the hope of securing benefits in addition to those on water and salt metabolism.

#### PRACTICE-SAVER

A useful practice-protector for doctors called to duty with the Army or Navy has been suggested by a Philadelphia physician, says *Medical Economics*. A variation of an older idea sometimes used by doctors going on vacation trips, the scheme is described by its user as follows:

"During the last war I left my practice with a man I implicitly trusted and respected. After

I got to France, I made a point every few months of dropping a postcard to members of my practice. Often it was just a single line, a pleasant, or a friendly query.

"But it let them know I was still alive, and reminded them that I hadn't slipped completely out of their world. The effort was later repaid many times over."

I wonder if you could induce an attack in them by excessive doses

DR LOEB We have only 2 patients who have real familial periodic paralysis. The blood potassium levels drop spontaneously at intervals, and, consequently, I do not believe it would be possible to tell what you are doing. I should be a little hesitant to use it in those patients because of the fact that they are cured by massive doses of potassium chloride, and I think it is possible that we would accentuate the disease to, perhaps, an unfortunate point if we gave them those substances.

DR McKEEN CATTELL In relation to the use of this material in shock, it seems to me fair to consider the problem with reference to secondary factors that are responsible in part for the development of the syndrome—that is, damage to the capillary walls. There is a certain amount of experimental evidence indicating that these hormones do decrease the permeability. I wonder what you think of that evidence.

DR LOEB Mencken has done some work that suggests that cortical extract decreases permeability. I wish someone would produce more convincing evidence that the hormones we are talking about have a specific capillary action. I have sought for that evidence for several years because of this group of patients. I showed you who die because of peripheral collapse without any salt and water disturbance. As I have said, those patients die despite the administration of as much as 110 cc of cortical hormone in twenty-four hours. Hormone seems to have little if any clinical effect in these cases.

DR GOLD Would I be correct in assuming that in the treatment of a case of Addison's disease you would not use cortical extract?

DR LOEB I think that that is a fair question. In the maintenance of patients I certainly would not use cortical extract. A dose of 25 cc a day may cause a minimal effect on the blood sugar but no effect on the salt and water metabolism comparable with desoxycorticosterone. I cannot see that anything is gained in the practical maintenance of the patients with adrenal insufficiency by means of the extract. Theoretically, cortical extract in huge amounts should be worth more than desoxycorticosterone for the simple reason that it contains at least minute amounts of some of the steroids other than the one that has purely a salt and water effect. From the practical standpoint, I cannot see that it makes much difference, although I will say

that we use both cortical extract and desoxycorticosterone in the treatment of crises. We try not to get too much desoxycorticosterone effect, and we control that by blood serum protein levels. When we think we have given enough to obtain effective dilution, we then give considerable quantities of cortical extract, hoping that we may secure an effect other than that on the salt and water metabolism. I cannot say that our hopes are particularly gratified.

DR WHEELER To what extent are these substances effective by the oral route?

DR LOEB I might report three experiences. First, we gave between five and fifteen dollars' worth of an oral cortical extract daily over a period of many weeks in conjunction with salt and could not tell whether the patient took it or not. That was experience number one. Second, we received a preparation that is put up with vitamin C. We gave this patient 15 of these tablets a day—the producer recommends 3 to 6—and lowered the patient's salt intake from 15 to 5 Gm. a day while he was taking the 15 hormone tablets. In the course of three days the treatment precipitated a crisis. The third was a patient who had been advised to take the same preparation and had taken three dollars' worth every week. He came in with real insufficiency, which was alleviated by the administration of salt alone. On the basis of our experience I can say that oral cortical extract therapy has no place. There is no question but that activity can be demonstrated by oral doses in the animal, the ratio of doses by mouth and parenterally is something of the order of between 4 and 10 to 1. Recently, Anderson reported favorable results in treating Addisonian patients by the sublingual instillation of a few drops of desoxycorticosterone acetate dissolved in propylene glycol, one to three times a day. This procedure is distinctly promising, although we have had no experience with it.

DR CATTELL I assume that desoxycorticosterone is one of the materials in the chemical extracts of the cortex. Why then is the effectiveness of the extract so low?

DR LOEB It is a quantitative matter. Desoxycorticosterone is one of the steroids of the adrenal cortex present in the extracts. There are also other noncrystallizable steroids with an even higher effect on salt and water metabolism. The amounts of these potent substances in the usual cortical extracts are simply too small for effective results.

DR. DuBois Is there any evidence that

these cortical preparations will be of help in relieving fatigue in the military services?

Dr. LOEB Dr DuBois, I wish I could answer that question—and I think it is a terribly important one to be answered. It seems to me that a proper study, with controlled conditions, would be very much in order to ascertain the answer. All I can say is that on the basis of present observations I know of no real evidence to suggest that the administration of cortical extract would in any way influence a man's effectiveness. However, it should be properly studied.

In conclusion, I should like to state that most of the observations reported from our studies have been carried out by a group working at the Presbyterian Hospital—Drs J W Ferrebee, C Ragan, D Parker, and D W Atchley.

Dr CATTELL The material presented at this conference concerning the indication for the employment of the hormones of the adrenal cortex in therapeutics permits us to summarize with the simple statement: Only in demonstrable adrenal insufficiency do we have an unequivocal indication for the use of these hormones, and in this condition, as replacement therapy, dramatic therapeutic results may be attained. Doubt was expressed regarding the value of these hormones in states of weakness, low blood pressure, hypoglycemia, etc., where the evidence for adrenal deficiency is equivocal. Their use in peripheral circulatory failure falls into the same class. There is no justification for the employment of this therapy in Paget's disease, myasthenia gravis, bromidism, and other conditions where it has been uncritically recommended.

The disturbances resulting from adrenal insufficiency fall into two or possibly three classes. The first includes changes associated with the behavior of electrolytes and water, including increased excretion of sodium, loss of water which is reflected in a decreased plasma volume, an increase in plasma potassium, and a decreased urea clearance and ammonia excretion by the kidney. Possibly all these effects are secondary to altered kid-

ney function. The second group of disturbances includes those related to carbohydrate metabolism, the chief manifestation of which is hypoglycemia which may give rise to hypoglycemic shock and other nervous manifestations. The patient with adrenal insufficiency has a low sugar tolerance curve and may be unusually sensitive to insulin. The evidence for a third type of disturbance is seen in patients whose blood sugar, electrolyte, and water metabolism have been controlled by replacement therapy but who, nevertheless, die a characteristic Addisonian death, with a low blood pressure and terminal fever.

Approximately twenty steroids have been isolated from the adrenal cortex, but only one desoxycorticosterone, is available for clinical use. Desoxycorticosterone is strikingly effective in correcting the disturbances in salt and water metabolism of adrenal insufficiency but has practically no effect on carbohydrate metabolism. On the other hand, certain other substances that have been isolated in small amounts and are not available commercially, including corticosterone, dehydrocorticosterone, and 11-hydroxy-17-hydroxycorticosterone, have been shown experimentally to have an effect in improving carbohydrate metabolism but to have little influence on the electrolyte and water balance.

In Addison's disease, desoxycorticosterone, given by daily injection or in pellet form, is effective in causing an increase in blood sodium and a decrease in blood protein, nonprotein nitrogen, and potassium. The blood volume and interstitial fluid volume increase and, in time, also the blood pressure. The patient gains weight and, in the absence of active tuberculosis, is restored to a normal life and occupation. Cortical extracts are not nearly so effective and are, in general, not recommended for maintenance therapy, even though theoretically they should afford more complete replacement. However, in the treatment of crises desoxycorticosterone may be supplemented with cortical extract in the hope of securing benefits in addition to those on water and salt metabolism.

#### PRACTICE-SAVER

A useful practice-protector for doctors called to duty with the Army or Navy has been suggested by a Philadelphia physician, says *Medical Economics*. A variation of an older idea sometimes used by doctors going on vacation trips, the scheme is described by its user as follows:

"During the last war I left my practice with a man I implicitly trusted and respected. After

I got to France, I made a point every few months of dropping a postcard to members of my practice. Often it was just a single line, a pleasantry, or a friendly query.

"But it let them know I was still alive, and reminded them that I hadn't slipped completely out of their world. The effort was later repaid many times over."

# Medical News

## Albany County

Albany has the second lowest death rate among newborn babies of any city of comparable size in the state, figures of the maternal welfare committee of the county society show. Only 19 infants have died in the city during the past four years, compared with 13 in Binghamton. The rate for other larger cities in the state ranges into the hundreds. Albany's hospitals and the Visiting Nurse Association received praise.

## Allegany County

Fifteen members of the county society were addressed on April 24 following dinner at Hotel Belmont, by Dr J Sutton Regan of the Buffalo General Hospital on the treatment of peritonitis following a ruptured appendix.

## Cattaraugus County

The following items of special interest are contained in the annual report of the County Health Department.

### The report states

"For the second year in our history no diphtheria occurred. No case of typhoid was reported, probably for the first time in over a century. No babies died of measles or of summer diarrhea. There were only 6 deaths from the ordinary communicable diseases, the same group that caused 49 deaths in 1920, just twenty years ago. Half of our preschool children are immunized against diphtheria. A sharp increase in pneumonia raised the deaths but little because of new methods of treatment.

"Fewer mothers were lost in childbirth. For the second time in recent years, the county rate was below the average in upstate New York. The use of obstetric consultants, begun the year before, increased in 1940. Two studies were begun with the help of the county society—one of infant deaths under a month, the other of the effect of sending a mother home a day or two after delivery."

## Broome County

At the meeting held on May 13 in the auditorium of the City Hospital in Binghamton, Dr James E Perkins, director, Division of Communicable Diseases, New York State Department of Health, presented the analysis of the Binghamton pertussis study which was recently completed. He illustrated the talk with lantern slides.

## Chautauqua County

Thirty-five members of the Jamestown Medical Society attended a dinner meeting at the Hotel Jamestown on April 24, with Dr D C Perkins presiding.

There was a discussion of the municipal laboratory library and Sidney Morris, brother of the late Dr Henry G Morris, presented a photograph of his brother for the library.

Dr W Gifford Hayward spoke on "Unusual Urological Cases" and Dr Otto E Koenigsfeld discussed the Balkan situation.

## Erie County

The last stated meeting of the county society until October was held on May 27 at the Hotel Statler.

The annual and fourth stated meeting of the Buffalo Academy of Medicine was held at the Buffalo Museum of Science, April 23, Dr Francis D Leopold presiding.

The following nominees were elected to office for 1941 to 1942 with the exception of the secretary who is elected to serve two years, and the trustee for three years: president, Dr George E Slotkin, secretary, Dr A Wilmot Jacobsen, assistant secretary, Dr Clyde L Randall, treasurer, Dr William F Jacobs, and trustee, Dr Frederick T Schnatz.

On April 17 the first regular meeting of the newly formed "Medical Research Club of Buffalo" was held at the Medical School.

The founders and present officers of the Club are: Dr A Wilmot Jacobsen, president, Dr Niels C Klendsboj, vice-president, and Dr Stuart L Vaughan, secretary-treasurer.

The Charter Membership consists of 76 persons, each of whom has recently published results of meritorious clinical investigation.

## Greene County

Dr Frederick L Patry, of Albany, who has served as neuropsychiatrist of the Albany Induction Board since its opening November 25, 1940, addressed the county society at Catskill on May 13. His subject was "Psychiatric and Neurological Examination Facts and Deductions After Processing 10,000 Selectees."

## Kings County

Brooklyn last year had the lowest maternity death rate of any borough in the city and the lowest in its history, Dr Charles A Gordon told a gathering of leaders in social welfare work at the seventh annual Mother's Day luncheon of the Maternity Center Division of the Visiting Nurse Association of Brooklyn, at the Hotel St George on May 1.

Dr Gordon, chairman of the special committee on maternal welfare of the Kings County and the New York State Medical societies, attributed much of the gain in the battle against maternity death to the work of the Maternity Center Division.

He thanked the assembled division workers particularly for their cooperation with the county medical society in furnishing data for the obstetric conferences held monthly under the medical society's auspices. These conferences, said Dr Gordon, at which, since 1936, all borough physicians have been invited to discuss obstetric cases, constitute a "unique mechanism" that has contributed greatly to the reduction of maternal deaths.

The need of some means of making medical care available to the poor without leaving that burden on the shoulders of the private physician was stressed in an address by Dr Fred L Adair, chairman of the American Committee on Mater-

nal Welfare and chief-of-staff of the Chicago Living-In Hospital

"Vast changes have taken place in medical practice in the last generation," said Dr Adair. "Not only has the period of education and training for the doctor been increased but the equipment needed has become more elaborate and expensive and the technics of diagnosis and treatment more exacting. The time and care a physician must devote to every case have greatly increased, and this without regard to whether the patient pays or not."

"The doctor no longer can carry the load of charity practice. Some readjustment must be made in order to spread good medical care throughout the country."

Asked later whether he meant socialized medicine, Dr Adair replied, "It isn't a question of the doctors opposing or favoring any particular solution of the problem, but of arriving at some proper technic or method of getting medical care to those who need it."

A regular monthly meeting of the Rugeboro Medical Society was held at the Shore Road Hospital on May 8.

The paper of the evening was "Intra-cranial Hemorrhage" by Dr Joseph Globus, associate neuropathologist of Mount Sinai Hospital, neurologist, Letchworth Village, and consultant neurologist, Southside and Mather Memorial.

The discussion, from the surgical aspect, was led by Dr E Jefferson Browder, neurosurgeon of the Brooklyn and Kings County M-E, Holy Family, St. Giles and Beth Moses hospitals.

Dr Herbert Gordon, of Far Rockaway, was elected president of the Rockaway Medical Society on April 17 at a meeting in the Lawrence Country Club.

Other officers elected are Dr Irving G Frohman, vice-president, Dr Grnsword Nammack, treasurer, and Dr Archibald O Wood, secretary.

#### Nassau County

There are 484 actively practicing physicians in Nassau, according to an inventory by the county society, of whom 38.4 per cent are within draft registration age. Only 10.1 per cent are more than 55 years of age and 8.4 per cent are members of the society, reports J Louis Neff, executive secretary.

#### New York County

The Graduate Fortnight of The New York Academy of Medicine will be held from October 13 to 24, 1941, the subject this year being "Cardiovascular Diseases Including Hypertension."

The Fortnight will present a carefully integrated program which will include morning panel discussions, afternoon clinics and clinical demonstrations at hospitals of New York City, evening addresses, and a scientific exhibit. The evening sessions at the Academy will be addressed by recognized authorities from leading medical centers of the United States and Canada. The comprehensive exhibit will include books and roentgenograms, pathologic and research material, clinical, laboratory, diagnostic, and therapeutic methods. There will be demonstrations of exhibits and of fresh pathology.

At the meeting of the Section of Dermatology and Syphilology of The New York Academy of Medicine on May 6, case presentations were given by the Beth Israel and Brooklyn Jewish hospitals and the Cornell Medical College Clinic, with a general discussion.

A combined meeting of the Section of Neurology and Psychiatry of The New York Academy of Medicine and the New York Neurological Society was held at the Academy on May 6, with papers on "Salvarsan Encephalitis," "Brain Abscess," and "Electrical Injuries of Central Nervous System."

Dr James Ewing of Memorial Hospital gave an address on "Problems in Traumatic Cancer" before the Society of Medical Jurisprudence at the Academy building on May 12.

The French Medical Society of New York had as its guests on May 15 at the New Amsterdam Hospital, the Sociedad Medica Hispano Americana, the American-Hungarian Medical Association, the Italian Medical Society, the Russian Medical Society, the Rudolf Virchow Medical Society, and the International Medical Club of New York.

The program was as follows: addresses (with projections) "Suture and Canicure in Medicine" by Dr Victor Robinson, professor of history of medicine, Temple University School of Medicine, and "Travels of a Doctor," by Dr Howard Fox, eminent professor of dermatology and syphilology, New York University College of Medicine.

#### Oneida County

At the May 15 meeting of the Utica Academy of Medicine at the Hotel Utica, Dr D Anthony D'Esopo, Columbia University Medical Center, New York City, spoke on "The Occipito-Posterior, Its Mechanism and Treatment," with the discussion opened by Dr Keith Preston and Dr P P Gregory. Dr Karl Gruppe spoke on "Bronchoscopy in Diagnosis," with the discussion opened by Dr William Jensen and Dr R C Hall.

#### Ontario County

Dr William Eikner of the Clifton Springs Sanitarium staff was guest speaker on May 8 at the monthly meeting of the Canandaigua Medical Society, substituting for Dr Adrian S Taylor, scheduled speaker. Dr J Wendell Howard was host at Halloway House, East Bloomfield.

Dr Eikner discussed "Use of Continuous Spinal Anaesthesia," giving case reports from the sanitarium since January 1. Dr Hubbard K Meyers, president, conducted the meeting which followed dinner served to fifteen.

Dr C Harvey Jewett will be host for the next meeting, June 12, when Dr C J Bobeck will give a paper on "Cardiac Arrhythmias."

#### Otsego County

The Otsego County Society met on April 9 at Cooper Inn, Cooperstown, and on May 14 at the Hotel Oneonta, Oneonta. At the former meeting, the second of the 1941 postgraduate lectures was given by Dr M B Handelsman, associate in medicine, Long Island University Medical School, on the topic "The Diabetic Patient and the General Practitioner."

At the latter meeting, the third lecture was given by Dr M V Armstrong, assistant clinical professor of obstetrics and gynecology, Long Island University Medical School, on the topic "How Can the Obstetrician Aid in Reducing the Mortality of Prematurely Born Infants?"

#### Richmond County

Dr Nathan B Van Etten, president of the A.M.A., addressed the county society at its annual dinner on May 7

Dr Arthur S Driscoll, of Grymes Hill, who died on April 27, was president of the county society from 1934 to 1935 and was vice-president of the state society in 1937

#### Rockland County

The spring meeting of the county society was held on April 23 at the Rockland State Hospital, Orangeburg

The medical portion of the afternoon was devoted to a lecture on "Cardiac Treatment" by Dr Louis F Bishop, Jr, attending physician at Bellevue Hospital, New York City, illustrated by lantern slides. Following the business and scientific sessions, the members were the supper guests of Dr Russell E Blaisdell.—*Reported by W J Ryan, M D, Secretary*

#### Schenectady County

Dr Will Cook Spain spoke on "Hypersensitivity to Common Foods" at the meeting of the county society on May 6 at the nurses' home auditorium, Elba Hospital

Dr Spain is chief physician in allergy at the Post-Graduate Hospital, New York. Preceding his lecture was a short discussion on allergy to liver extract by Dr Arthur H Congdon

#### Ulster County

The regular spring meeting of the county society was held on May 7 at the Governor Clinton Hotel in Kingston. The business session was followed by an informal program arranged by Dr E F Shea. Dr Peter Irving, of New

York City, secretary of the State Medical Society, spoke on the administrative activities of the State Society. Dr Joseph S Lawrence of Albany, told of his work as legislative executive officer of the State Society.

#### Westchester County

The county society will have a dinner-dance on Saturday evening, June 14, at the Westchester Country Club, at Rye

Dr Camillo A Cerchiara was elected president of the Mount Vernon Medical Society to succeed Dr Mark G Khatsheo, returning head, at the annual spring dinner meeting on May 8 at the Pelham Country Club. More than forty-five members attended the dinner, which followed an afternoon of golf.

Named to succeed Dr Cerchiara as vice-president was Dr Fred L Vosburgh, former secretary. Dr George A Bochow was selected for the secretary's post, while Dr William A Randell was renamed treasurer.

At a stated meeting of the Yonkers Academy of Medicine, on April 16, at the Hudson River Country Club, Dr Charles Lee Buxton of Sloane Memorial Hospital offered a paper on "Endocrine Therapy in Gynecological Disorders." Discussion was opened by Drs Jacob Kertzman and Richard C Young.

The Westchester County Society of Gastroenterologists met at the New York Hospital, Westchester Division, on April 25, and Dr Arthur J Patek, Jr, of the Research Division for Chronic Diseases at Welfare Island, spoke on "Treatment of Cirrhosis of the Liver." Dr Carl Greene, of New York City, opened the discussion.

At a regular meeting of the New Rochelle Medical Society on April 14, Dr Anthony Bassler, F A C P, of New York City, president of the National Gastroenterological Association, presented a paper on "The Intestine and Chronic Arthritis."

### Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
Alfred E Baker	64	Queens Canada	April 29	Richmond Hill
Samuel A Beddall	46	Louisville	March 9	Beacon
Pierron W Bergen	49	N Y Hom	May 1	Bayside
John E Canfield	64	Albany	May 10	Herkimer
Farn B Chu	37	Yale	April 18	Manhattan
James I Edgerton	70	Jefferson	May 8	Manhattan
Ralph P Folsom	64	P & S N Y	May 12	Poughkeepsie
Greta Frankenberg	45	Berlin	April 25	Kew Gardens
Conway A Frost	74	Bellevue	May 10	Utica
Nathan B Jacobson	53	Jefferson	March 9	Long Beach
Leo A McClusky	39	Syracuse	May 1	Syracuse
William J L Millar	75	Buffalo	April 15	Rensselaer Falls
George H Reichers	62	P & S N Y	April 30	Brooklyn
Henry L Schelling	74	N Y Univ	April 12	Brooklyn
William R. Sears	73	L I C Hosp	April 18	Brooklyn
Bernard Sour	71	P & S N Y	May 7	Manhattan
Frank H Starr	76	Bellevue	April 16	Corning
Charles E Stickney	77	Bellevue	April 22	Constable
Adolph Zeh	77	P & S N Y	February 24	Manhattan

# Hospital News

## Helping the Fellow Who Can't Pay the Full Bill

WE ALL know the problem of the man who can support himself under ordinary conditions but finds the added burden of illness more than he can carry, remarks Dr T R. Ponton, editor of *Hospital Management*. He notes that at the recent meeting of the Western hospitals Dr Ginsburg, of Fresno, told how his hospital and its medical staff had been assisting this man since 1933. Briefly, the basis of the plan is to investigate the patient's ability to pay without serious financial handicap. After this he is charged a total fee based on the results of this investigation. The hospital gets a reduced rate for its services and the physician also accepts a partial fee. The result is that everybody is better off.

The most striking illustration of this mutual arrangement is in the Baker Memorial, a part of the Massachusetts General system. In this hospital the patient is not admitted if he is really indigent or if he is able to pay full charges. It is the medically indigent and borderline cases that are cared for. The hospital charges a rate which is below cost and the physician also receives a partial fee. In this case the feeling of confidence between the hospital and the members of its medical staff is so complete that the hospital investigator usually determines the amount of the physician's fee.

"Years ago," Dr Ponton recalls, "I worked out a similar scheme at the Illinois Masonic in Chicago. We had a large class of Masonic charity, much of which needed assistance rather than charity. Every case was investigated. The members of the medical staff agreed that they would care for the patient at a fee not greater than the hospital bill."

Dr Ponton gave the details of the plan as follows:

1. The financial status of every patient applying for Masonic charity was investigated.
  2. By conference with the patient it was determined how much he would be able to pay for his care.
  3. The normal hospital bill was estimated.
  4. The physician's fee was fixed, patients being assigned to the staff physician on service.
  5. A credit agreement was entered into whereby the time was fixed when payment of the account would commence and the weekly amount would be paid.
  6. When payments commenced the first was applied on the hospital bill, the second was turned over to the physician and so on until both were paid at the originally agreed rate.
- "The result was remarkable," said Dr Ponton. "We reduced our Masonic charity, the hospital received part of its cost of care, the physician was paid a reasonable fee but, best of all, the patient was not pauperized."

## Buffalo General Serves Tea

LET'S stop in for tea at Buffalo General Hospital, Buffalo, New York, suggests the

"Roving Reporter" of the *Modern Hospital*. It's their invitation. Surely there could be no more attractive place in which to spend a few minutes enjoying tea and cookies than the large solarium on the first floor. If we're fortunate we'll strike an afternoon when the Hammond organ is being played by one of the employees who, incidentally, enjoys quite a reputation as an organist.

"This practice was started about a year and a half ago," Dr Fraser D. Mooney, superintendent, tells us, and he adds, "we wouldn't think of discontinuing it."

"First, it serves as a nice 'pick-up' at a time when people are tired. Second, it is much appreciated by ambulatory patients, nursing staff, attending staff, house staff, office staff, visitors—in fact, by anyone in the vicinity who happens to drop in for tea with us. Third, from a public relations and personnel relations angle we believe it to be valuable. Fourth, the added efficiency caused by the short rest and tea and cookies we believe more than pays for the upkeep—it probably averages between \$400 and \$500 a year."

So don't forget, the invitation stands: tea at Buffalo General every afternoon between 4 and 5 o'clock with the exception of Saturday and Sunday. The average time thus spent is about ten minutes and, believe it or not, the courtesy hasn't been abused—by patients, personnel, or public.

## Bad Luck for the Sick Poor

IT WAS "bad luck for the sick poor," says the *New York Times*, when in April the New York City Board of Estimate defeated a motion of Borough President Lyons of the Bronx to add \$460,000 to the sum allowed voluntary hospitals for handling city cases. Even if this money had been allowed it would not entirely have relieved what is really a scandalous situation. The municipally operated hospitals are badly overcrowded. The private hospitals are about three-fourths full. The city now pays \$3.00 a day for city patients received in the private hospitals, which is not only a lower rate than that paid in up-state hospitals doing a similar service, but is between one and two dollars less than it costs the hospitals to care for the patients.

"This ratio of services paid for to services rendered cannot be kept up indefinitely. Hospitals that already find it hard to balance their budgets cannot afford to fill their empty beds at a collective cost of \$5,000 or more a day. Nor can the city save money in the long run by pinchpenny dealings with them. It might save money by filling the empty private beds at a fair price and thus avoiding the necessity for more municipal hospitals."

"There is no argument as to the facts. More than two years ago Mayor La Guardia made an appeal to 'strengthen the position' of the private hospitals. Nearly a year ago the situation was clearly presented in the report of the Thacher Committee, working under the auspices of the

At the latter meeting, the third lecture was given by Dr M V Armstrong, assistant clinical professor of obstetrics and gynecology, Long Island University Medical School, on the topic "How Can the Obstetrician Aid in Reducing the Mortality of Prematurely Born Infants?"

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<b>B<sub>1</sub></b> (THIAMIN)	<chem>CC1=C(C(=CN(C(=CN1)C)C)C)C</chem>
<b>B<sub>2</sub></b> (RIBOFLAVIN)	<chem>O=C1NC(=O)NC(=O)N1C</chem>
<b>B<sub>3</sub></b>	?
<b>B<sub>4</sub></b>	?
<b>B<sub>5</sub></b>	?
<b>B<sub>6</sub></b> (PYRIDOXINE)	<chem>CC1=CC(=CC=C1C(=O)N)C</chem>
<b>FILTRATE FACTOR</b> (PANTOTHENIC ACID)	<chem>CC(=O)C(C(=O)O)C(=O)N</chem>
<b>FACTOR "W"</b>	?
<b>NICOTINIC ACID</b> (AMIDE)	<chem>NC(=O)C1=CC=CC=C1</chem>
<b>UNKNOWN FACTORS</b>	???

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Each Capsule of Bezon contains

Thiamin	(Vitamin B <sub>1</sub> )	1000 micrograms
Riboflavin	(Vitamin G)	1000 micrograms
Nicotinic Acid	(P-P Factor)	150 micrograms
Pyridoxane	(Vitamin B <sub>6</sub> )	35 micrograms
Pantothenic Acid	(Filtrate Factor)	225 micrograms
together with all the other known members of the Natural B Complex		

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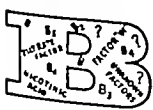
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The full day's dose in a single capsule



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The entire B Complex, not just a few factors.



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Hospital Council of Greater New York Nothing was done about it An increased appropriation is again refused This is short-term and misleading economy It is long-term waste The Board of Estimate ought to reconsider

### Newsy Notes

THE New York State Hospital Association has completed preliminary tabulations of a survey made to determine the patient bed facilities that could be made available without new construction, reports *Health News* Two hundred fifty-five member hospitals report that in case the present emergency warrants expansion of bed facilities they would be able to provide 26,650 more beds These hospitals report further that the operation and maintenance of these supplementary facilities would necessitate the additional expenditure of \$2,159,100 and the employment of more than 10,000 additional employees

This information has been forwarded to the Legislative Commission to Formulate a Long Range Health Program and will be available shortly as part of an interim report It will be sent, together with the results of a survey of ambulance services and schools of nursing now nearing completion by the New York State Hospital Association, to each of the county advisory health preparedness committees of the state

The WPA has started a training program to prepare men and women for work as hospital attendants There is at present a serious need for these subsidiary workers in city hospitals and institutions, and their value would be increased manifold during any local or national emergencies that might arise, Major Irving V A Huie, WPA administrator for New York City, announces The training course opened with the first fifty men and women selected for the work, to be augmented every three weeks by fifty more trainees until the full complement of 350 is in training Materials, supplies, and equipment as well as the teaching staff of registered nurses will be supplied by the Department of Hospitals Facilities of the Welfare Hospital on Welfare Island will be used for the WPA training courses through the cooperation of Dr Christman G Scherf, medical superintendent

According to its manufacturers, says *Hospital Management*, the fastest field x-ray unit of its kind in the world will enable the United States Army to examine wounded soldiers at the rate of one every minute The new unit, built by Westinghouse X-Ray Co, Long Island City, New York, is designed to locate the position of bullets and shell fragments in injured men isolated from hospital facilities

Westinghouse states that the portable x-ray equipment can be erected in ten minutes on a battlefield and is adaptable for almost all types of x-ray studies, though it is designed particularly for direct studies of the patient without the need of films Provision is also included for

making ordinary x-ray pictures The exact point at which a bullet has entered the body of a patient and the depth to which it has penetrated can both be determined in a sixty-second examination, it was reported

Two hundred and four families living in Chango County have borrowed money from the Farm Security Administration of Washington to enroll in the nonprofit community Ward Service Hospital Plan, Inc, reports the *Bainbridge News*

These families representing a total of over 800 people will be received in the hospitals of their choice for benefits described in the contracts of Hospital Plan, Inc

The checks covering their subscriptions are forwarded to the Plan by the Government Bureau

This is the first enrollment of its kind that has taken place in this section of the country and word has been received at the Norwich office of the Plan that similar arrangements are being made to extend the same privileges to agriculturists living in Otsego County who are being aided by the Farm Security Administration

Each subscriber is entitled to eighteen days of care in ward accommodations with general nursing, meals, special dietary services, drugs and dressings, operating room and delivery room, and ambulance service within the corporation limits of the participating hospitals

Seventy "men in white" appeared before the Board of Estimate of New York City in April and criticized as a "municipal scandal" the \$18 a month paid to the city's interns Dr William Obrinsky, chairman of the legislative committee, New York Region, Intern Council of America, served as spokesman

"The principle of pay for interns has already been established," he declared The time has come to convert this principle into a practice. The Intern Council recommends that the salaries of all residents and assistant residents be established at a uniform level of \$1,200 a year, and that interns be given a salary of \$1,000 a year

Dr Obrinsky pointed out that contrary to the Mayor's annual budget message of well-staffed and well-organized institutions, the city's hospitals are under-staffed, poorly equipped, and "dangerously" overcrowded He added that interns are handicapped in their work because of lack of sufficient help, including nurses and technicians The speaker continued

"The Mayor in his budget message expressed considerable sympathy for the overworked and underpaid nurses and hospital workers but not a single word did he have for the equally underpaid and equally overworked interns"

It also was pointed out that the intern is a licensed physician, trained for eight years at a cost of \$15,000, is 27 years old on the average, receives 60 cents a day for his services, and is "the lowest paid of all public servants, including teachers-in-training, rookie policemen, firemen, etc"



# Baby Chicks *Save* Babies' Lives



HEMORRHAGIC disease of the newborn is a potential threat to all infants. If not fatal, intracranial hemorrhage may result in permanent mental or motor disability. The disease is invariably associated with prothrombin deficiency. Vitamin K has been shown to be necessary for prothrombin formation and a highly potent and economical vitamin K active compound is now available.

More than 15,000 baby chicks were used in studies which resulted in the demonstration that 2-methyl-1, 4-naphthoquinone (now available under the name Thyloquinone) possessed vitamin K activity greater than the natural anti-hemorrhagic vitamins  $K_1$  and  $K_2$ . It is rapid in action even on oral administration and its effect in reducing prothrombin clotting time is evident within a few hours.

Thyloquinone is indicated with "bile salts" in combating and preventing hemorrhagic tendencies in obstructive jaundice and biliary fistula. Many writers have recommended the administration of "vitamin K" as an obligatory routine measure in maternal care. The suggested dose is 2 mg by mouth at the beginning of labor and then 1 mg in six hours if the patient is still in labor.

Thyloquinone in Oil is available for oral use in 1 mg miniature capsules (boxes of 20, 50 and 100) and in 5, 10 and 50 cc bottles. Also in 1 cc size ampuls, each containing 2 mg for parenteral administration.

*A leaflet describing in detail the various dosage forms of Thyloquinone and their use is available to physicians. Write Professional Serv. Dept. 745 5th Ave., New York.*

**E. R. SQUIBB & SONS, NEW YORK**  
MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1859

(Continued from page 1202)

Seventy-five beds and two ambulances of the Downtown Hospital and Pan-American Clinic, 129 Broad Street, New York City, have been dedicated to catastrophe service, and the formation of the hospital's Medical Emergency Defense Unit, consisting of twelve members of the institution's medical staff and fifteen of its nurses, is announced.

The emergency unit will be available at all times of day or night to go to the scene of any fire, explosion, or other catastrophe or to piers upon the arrival of ships bearing victims of maritime disasters.

The beds occupy the entire fourth floor of the eleven-story hospital building, and those on the eighth, ninth, and tenth floors will be made available if the need arises.

. . .

Among the many bills passed at the closing session of the Legislature was one authorizing the towns of Afton, Bambridge, Sidney, Guilford, Unadilla, and Masonville, or any two of them, to establish a joint public hospital district, to acquire land, build, and equip a general hospital, and to conduct and operate the same. The bill carried no appropriation and was merely an act permitting the people of the locality to get together and decide whether or not they wish to have such a hospital and, if so, just which towns wish to support the movement and pay the necessary taxes needed to build and operate such an institution.

. . .

St. Clare's Hospital, New York City, announces a plan to provide free hospitalization for underprivileged babies for a month after their birth in the hospital as a step toward reducing the death rate of newborn infants.

The plan, believed to be the first of its kind, will go into operation next fall when a building now under construction on 52nd Street, between Ninth and Tenth Avenues, is completed.

Under the plan a mother may leave her baby in the hospital for thirty days after its birth while she herself returns home or, as is often the case, to work.

.

American Red Cross and military officials recently witnessed a demonstration of a tubular iron stretcher carrier that is designed to convert an ordinary truck into an ambulance at a moment's notice. The frame is adjustable so that it can be made to fit into any size truck. It was developed by Mabel T. Boardman, national secretary of the Red Cross, and costs about \$25, says the *Modern Hospital*.

Red Cross chapters throughout the country will be urged to obtain the stretcher carriers and train volunteer units, to be known as "truck ambulance companies," to operate them.

## Improvements

The division of health of the Catholic Charities of New York will spend more than \$2,000,000 this year to extend the facilities of the twenty-six general and special hospitals affiliated with the charities, the Rev. John J. Bingham, director of the division, says in his annual report.

. . .

A \$355,000 WPA improvement job is under way at the Veterans' Hospital, 130 West Kingsbridge Road, New York City, and an additional \$500,000 improvement job is contemplated for the new fiscal year starting on July 1, it is announced by Major Irving V. A. Hue, WPA administrator for New York City.

Since WPA improvements to the hospital in the past totaled \$725,000, Major Hue said, by the time the present program is completed the hospital will have benefited to the extent of \$1,580,000.

. . .

Flushing Hospital is to have a new three-bed room in its maternity wing, given by the Soroptomist Club.

. . .

Mercy Hospital, Buffalo, will install a new x-ray machine.

.

St. Francis Hospital, Olean, has a new iron lung, the gift of generous citizens.

## "IT CAN BE DONE"

Dr. Gordon Park Jackson, Health Officer of Toronto, Canada, a city of 800,000, reports that his city did not have a single case of diphtheria in 1940. This world's record for a city of Toronto's size in the control of one of the most dreaded preventable diseases of childhood did not occur by accident, declares the *Kentucky Medical Journal*. It was the logical and direct result of an intelligently planned and actively prosecuted educational campaign by health authorities to secure the cooperation of the general public, especially parents, in immunizing preschool children. For the past ten years, Dr. Jackson and his assistants have sought by every available means to persuade the parents of every

newborn child to have the child immunized between the ages of 6 and 9 months. To this end every medium at their command was utilized—lectures before parent-teacher associations and civic and business organizations, radio addresses, moving pictures, posters, newspapers, and the distribution of literature. Every school in Toronto was visited and susceptible pupils immunized. In this way the great majority of children who were not protected during the preschool age were rendered immune to the disease. At the close of last year 80 per cent of all the school children in the city had been retested and found to be immune. The same means will produce equal success anywhere.

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# Medicolegal

LORENZ J. BROSNAN, Esq

Counsel, Medical Society of the State of New York

## Responsibility of Surgeon for Care Following Operation

IN A nearby state very recently an important decision was handed down in a case involving the liability of members of a hospital staff for negligence of other persons attached to the same staff.\*

The action was brought against the defendant, a practicing physician and surgeon, who was associated with the staff of the H hospital as assistant surgeon. The plaintiff entered the hospital as a ward case, paying for hospital care but receiving medical and surgical care free of charge from members of the staff. The chief of the hospital staff designated an intern to perform the operation and the defendant to be present as assistant. The operation was a simple one, consisting of the amputation of a little toe. It was performed, and at its conclusion the resulting wound was packed by the intern with a folded strip of vaseline gauze, after which the entire foot was bound up with plain gauze.

After the operation the patient was sent to the ward "where the aftercare was in the hands of surgeons assigned to the ward by the house staff." The defendant after being present at the operation as assistant to the operator had no further connection of any sort with the care of the patient.

It seems that the patient stayed in the hospital for three weeks, and upon leaving there was still some discharge from the stump. Ulceration followed and, while under the care of his personal physician, a piece of gauze which had apparently been in the wound since the operation was removed. There was a spread of infection with injury of a serious nature.

The case was tried before the Court without a jury and upon such a showing of facts as above outlined, the Trial Court concluded that the defendant was under no duty to treat or care for the plaintiff after the operation and, accordingly, judgment was entered in favor of the defendant.

An appeal was taken by the plaintiff but the Appellate Court affirmed the judgment appealed from. In the opinion the Court said in part:

"The plaintiff had the burden of proving that the defendant failed to exercise that degree of care, skill, and diligence ordinarily had and exercised by physicians and surgeons engaged in the same line of practice in the general neighborhood of H. If there was negligence constituting malpractice, it occurred during the aftercare. No claim is made that there was negligence in connection with the operation itself, which was the only connection the defendant had with the patient's care or treatment. Therefore, the plaintiff must prove that there was a legal obligation on the part of Dr. Q. to treat the patient after the operation and that he failed in that duty. The facts found do not indicate that

there was such proof, they show that there was no such duty. The defendant was assigned to the case for the sole purpose of assisting in the operation itself. The aftercare was in the hands of other surgeons assigned to the ward by the Chief-of-Staff. The defendant was on duty in the women's ward only and had no connection with the aftercare of this patient. Upon these facts, as the Trial Court aptly stated, 'the only sound and reasonable conclusion is that defendant's duty ended with the service in the ward. No other holding would be consonant with the exigencies of the modern hospital setup.'

"The plaintiff's argument assumes that the patient and the defendant entered into a contract whereby this defendant agreed to treat and care for the plaintiff's condition during his hospitalization, and cases are cited holding that the physician is bound to continue treatment as long as the contract is in force. This assumption runs contrary to the facts found in this case, which discloses that the undertaking of the defendant was limited to assistance at the operation. The cases cited are not in point.

"The principal claim made in the plaintiff's assignments of error was that the defendant was under a duty to either remove the pack himself, within a reasonable time after the operation, or by examination see that someone else removed it. That duty could be established by expert evidence as to the practice of surgeons in the community in like cases, and that in such cases the operating surgeon also personally performed aftercare, by which the basis would be laid for a finding of neglect by a defendant who had not conformed to the general practice, where the plaintiff might rely on the only generally recognized exception to this rule, and upon mere proof of the facts of the doctor's treatment or lack of it, claim that those facts established 'such obvious gross want of care or skill as to afford, of itself, an almost conclusive inference and dispense with the necessity of testimony by expert witnesses.' As we have stated, there is not a suggestion in the finding that in failing to remove the gauze personally or in failing to give personal aftercare or supervision the defendant fell below the standards set by the profession in similar circumstances.

"The plaintiff is left with the claim that because Dr. Q. was present and assisted at the operation he was guilty of obvious and gross misconduct in permitting the aftercare to pass into the hands of other licensed physicians and surgeons. We adopt the reasoning of *Hunner vs. Stevenson*, 89 A 418, p 421, where the Court said:

"The theory of the defendant on the main  
[Continued on page 1208]

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- Therapeutically active in eczema —particularly suitable in children's eczema
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This muscle extract has also demonstrated efficacy in *Cardiac Dyspnoea*, *Cardiac Asthma* and *Obliterative Arterial Diseases* especially in which intermittent claudication is present. Carnacton appears to exert a tonic and vasodilating action on the circulatory system, with a sedative effect on the neuro-psychic sphere.

1 cc. and 2 cc. ampoules boxes of 12 and 50.

Vials of 30 cc. and 50 cc. for oral use.

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## LEUKORRHEA

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For office treatment,  
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What can I trust  
my patient with,  
to use at home?

### CLINICALLY TESTED\*

**CONCLUSIONS** "effective in the treatment of leukorrhea in general (a) eliminates unpleasant odor of discharge, (b) cuts down or eliminates irritation inside and without vagina, (c) reduces quantity and density of discharge, including that following canterization

"It is non irritating and non toxic in contradic-  
tion to the arsenic and picrate preparations, equal-  
ly effective and actually soothing, especially: (a) in  
the infantile vagina, (b) in the senile vagina, (c) in  
trichomonas vaginalis vaginitis of pregnancy"

\* *Treatment of Leukorrhea with Ozonide of  
Olive Oil* David Nye Barrows, N Y State Journal  
of Medicine, Vol 41, Jan 15, 1941

**PROPERTIES** At body temperature, in the pres-  
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nascent oxygen, steadily and unremittingly for  
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[Continued from page 1206]

question is thus stated in the brief filed in his behalf "That an operating surgeon at a hospital of repute in the case of a wound left open is not liable for the negligence of hospital, surgeons, nurses, or interns in the after dressing of such wounds, if such operating surgeon is without knowledge of, or in privy to, such negligence." At this date, when it is well known that there are physicians and surgeons of special skill in particular practice of their profession, it could not safely be announced as a general rule of law, applicable to such cases as this, that a surgeon who performs an operation is liable for the negligence

of other physicians, nurses, or interns in hospitals in the after treatment, unless he specially undertakes such employment."

The Court further said

"We conclude that in the absence of facts tending to show that there was a contractual duty on the part of the defendant to furnish aftercare, or that under the situation disclosed, the relationship of doctor and patient carried with it the duty of aftercare, the defendant was entitled to follow the hospital system, which, as the finding shows, divorces the operation from the aftercare and puts the aftercare in the hands of other surgeons"

### Inquiries

YOUR Counsel recently received the following inquiry

"Dear Mr Brosnan

"Would you be so kind as to furnish me with some advice relative to the liability of a physician working in a hospital clinic?

"The hospital in question is the E Hospital where we intend to open a charity clinic, charging a nominal sum of 25 or 50 cents to cover expenses. I am to be the chief of all the clinics not actually working therein. I would like to know if the patients, in the clinic, could sue the chief although not actually participating in the treatment or if they could sue the individual doctor in charge of the clinic at the time. In case of an intern treating the patient at that time could he also be sued or both he and the attending in charge of that clinic or all, the intern, attending in charge at the time together with the chief of all the clinic departments?

Very truly yours,"

Your Counsel's reply was as follows

"Dear Doctor

"It is not possible, in the absence of the actual facts of a case, to give a definite opinion as to liability or nonliability, since the factual situation may change the legal principles to be applied

"I would say that the chief or director of a clinic, who does not personally see, treat, or issue instructions for the treatment of a patient, would not be responsible to that patient in the event that the patient claimed that

he was improperly treated. Such was the ruling by the Appellate Division of the First Department in a recent case

"Insofar as Doctor N was concerned, it is rather difficult to understand the theory upon which the case against him was submitted to the jury. The testimony from the trial indicates quite clearly that he did not treat the respondent. As head of the surgical division, he made the rounds of the wards, he did not ordinarily examine the patients. He did not read the plates which were taken of the patient's injured leg, nor did he owe any particular duty to him since it appears that the patient was under the care of Doctor K and Doctor C. Furthermore, it appears that Doctor K did not even discuss the case with him."

"I may add that this case was taken to the Court of Appeals and the action of the Appellate Division unanimously affirmed

"Of course, the patient could sue any doctor and this includes an intern who was in attendance on his case. This will include any doctor who, despite the fact that he had not seen the patient, undertook to issue specific instructions with respect to the patient's care

"I can conceive of a situation involving some administrative defect in the running of the clinic which, if resulting in injury to a patient might possibly involve the head of the clinic as well as the individual doctor in charge of the clinic at the time, but I believe the possibility of this happening would be rare

Yours very truly,"

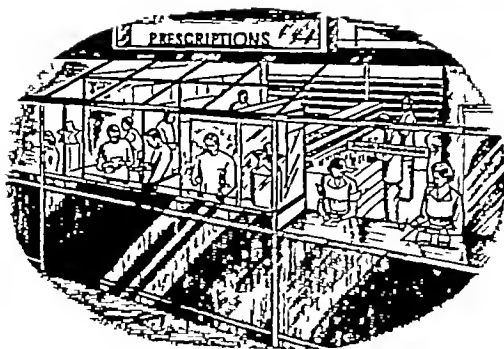
### ARTIFICIAL INSEMINATION

Up until June, 1940, according to a recent questionnaire sponsored by the National Research Foundation for Eugenic Alleviation of Sterility there have been 9,238 children born in the United States as a result of artificial insemination, notes the *Virginia Medical Monthly*. Five thousand seven hundred and twenty-eight of these children were produced by artificial insemination in which the husband of the mother was employed. In 3,510 cases, donors were used. More than 5,000 doctors participated in these reported results

Apparently it was not always easy to bring about pregnancy by artificial insemination, but in some instances many unsuccessful attempts were followed by a satisfactory result. One

hundred and twenty-four physicians, for example, reported final success in cases after more than 21 failures at insemination. Among those artificially inseminated, 23 per cent miscarried, there were 22 extrauterine pregnancies and 44 flare-ups of previously existing infection

The medical profession has gone a long way, eugenically speaking, since the days when they fought over contraceptive advice as a eugenic and economic measure. Artificial insemination of human beings using material from donors is something few of us would have dreamed of a decade ago. Few of us would dream today that it is being practiced on such a wide scale as this survey has revealed



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The only sterilizer you can fill in the morning and forget the rest of the day . . . Ritter Equipment Co., Inc., Rochester, N. Y.

# Woman's Auxiliary

To the Medical Society of the State of New York

THE Sixth Annual Convention of the Woman's Auxiliary to the Medical Society of the State of New York convened at the Hotel Statler, Buffalo, on April 28 to May 1. Three hundred and twenty-nine doctors' wives were registered.

The women of the Erie County Auxiliary were perfect hostesses. Congratulations should be extended to Mrs. Carlton E. Wertz, convention chairman, and to her committee whose thoughtful planning afforded us so much comfort and pleasure.

The opening meeting was called to order Monday at 10:45 A. M., by the president, Mrs. Luther H. Kice. The invocation, by Father Timothy J. Coughlin, was followed by a pledge of allegiance to the Flag of Our Country, led by Mrs. Albert M. Bell. This was followed by a Prayer. Mr. John Sturgess was soloist at the Memorial Service which was very impressive.

Mrs. V. E. Holcombe, national president of the Woman's Auxiliary, was our gracious guest of honor.

Mrs. Luther H. Kice, president, gave a complete report of her work. Three new counties, Essex, Montgomery, and Niagara, were organized during her term of office. We are deeply indebted to Mrs. Kice for carrying us through another successful year, which has brought us added interests and an enlarged circle. A short report was given by Mrs. George B. Adams, president-elect. All members of the board, chairmen of standing committees, and all county presidents reported that efficient work is being carried on. The state officers and the delegates to the National Convention were elected. Speakers on Monday were Dr. James Flynn, president of the State Society, and Dr. Louis H. Bauer, speaker of the House of Delegates.

On Tuesday morning a postconvention meeting was held. Mrs. George B. Adams, our new president, called the meeting to order.

Dr. Samuel J. Kopetsky, president of the State Society, addressed the meeting. He advised us to keep "Our Home Front" secure. Mrs. George B. Adams appointed the executive committees for the year. The project for the year will continue to be the Physicians' Home.

The trend of thought during the convention was "To be able and ready to respond to any national emergency during this period of world crisis."

The National Woman's Auxiliary Convention will be held June 2 to 6, in Cleveland, Ohio, with headquarters at Hotel Carter.

Mrs. Clarence J. Durshodwe, chairman of this year's Hobby Show, used excellent judgment in staging and arranging the exhibits. The orchids exhibited by Dr. and Mrs. Arthur R. Gibson prove that doctors have patience.

The Sixth Annual Birthday Dinner was held in the Ballroom of the Hotel Statler. The room was beautifully decorated with wisteria. The decorations were made by members of the Erie County Woman's Auxiliary. Mrs. V. E. Holcombe, national president, was the guest speaker. We were inspired by her interesting and helpful

address. A beautiful silver tray was presented to Mrs. Luther H. Kice, retiring president. Pins were given to all past state presidents. A program of music and dancing was enjoyed. In conclusion, the Reverend Arthur Walwyn Evans, D. D., delivered a humorous talk, "The Mirth of a Nation."

On Tuesday afternoon a delightful tea was given at the Twentieth Century Club. On Wednesday a luncheon was served in the Georgian Room of the hotel. Mrs. Luther H. Kice acted as toastmistress. We were honored by the presence of Dr. Nathan B. Van Etten, president of the American Medical Association. The speakers were Dr. Chas. Gordon Heyd and Dr. A. H. Aaron. A fashion show was presented during the luncheon. On the program was Mrs. Clyde L. Randall who entertained everyone with an excellent whistling solo. Sight-seeing trips and a trip to Niagara Falls brought the activities of a well-planned convention to a close.

We are greatly indebted to the Erie County Auxiliary for the splendid program and entertainment and to the Hotel Statler management for their excellent service. We extend our appreciation to Mrs. Luther H. Kice, the retiring president, and best wishes to Mrs. George B. Adams, our new president, for continued progress and cooperation. Let us pledge to her our whole-hearted interest and aid for the year 1941 to 1942.

Officers of the Woman's Auxiliary to the Medical Society of the State of New York are

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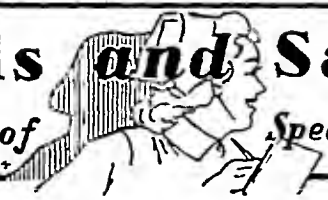
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[Continued on page 1212]

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valescent stage of serious illness. Sanitariums, without exception, give a great deal of thought and consideration to dietetic problems. Equipped to give the necessary time to individual requirements, the sanitarium is in a position to follow the patient's personal medical adviser's own directions for diet when asked to do so. Or, where no special diet is necessary, the physician may still feel that proper nourishment, in spite of food whims of his patient, is receiving constant attention.

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[Continued from page 1210]

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## COMMON SENSE

While it probably would not be democratic to state that an eligible young man shall not be drafted simply because he is a doctor, we do not feel it would be against the public interest or the principles of democracy to state that since there is a threatened shortage of doctors in the country a doctor shall not be drafted except as a doctor. It does not seem like good economy to take a perfectly well-trained doctor out of civilian practice and turn him into a machine gunner, a potato peeler, or what the Navy used to call a "Captain of the Head."

Without presuming to interfere with the orderly processes of democracy we cannot refrain from expressing the hope that as the draft machinery is developed some way will be found of making certain that doctors and dentists called into the Army are put to work where they will do the most good.—*Nassau Med News*

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# Books

Books for review should be sent to the Book Review Department at 1313 Bedford Avenue Brooklyn, N. Y. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and interest to our readers.

## RECEIVED

**First Aid in Emergencies** By Eldridge L. Eliason, M.D. Tenth edition. 16 mo. of 260 pages, illustrated. Philadelphia, J. B. Lippincott Company, 1941. Cloth, \$1.75.

**Diagnostic Procedures and Reagents. Techniques for the Laboratory Diagnosis and Control of the Communicable Diseases.** First edition. Octavo of 352 pages, illustrated. New York, American Public Health Association, 1941. Cloth, \$2.75.

**Surgery in Modern Warfare.** By Sixty-five Contributors. Edited by Hamilton Bailey, F.R.C.S. Volume I. Quarto of 480 pages, illustrated. Baltimore, Williams and Wilkins Co., 1941. Cloth, \$10.

**Lectures on Diseases of Children.** By Sir Robert Hutchison, M.D., and Alan Moncrieff, M.D. Eighth edition. Octavo of 471 pages, illustrated. Baltimore, Williams and Wilkins Co., 1940. Cloth, \$6.75.

**Criminal Youth and the Borstal System.** By William Healy, M.D., and Benedict S. Alper. Octavo of 251 pages. New York, The Commonwealth Fund, 1941. Cloth, \$1.50.

**Physical Medicine. The Employment of Physical Agents for Diagnosis and Therapy.** By Frank H. Krusen, M.D. Octavo of 846 pages, illustrated. Philadelphia, W. B. Saunders Company, 1941. Cloth, \$10.

**Chemical Warfare.** By Curt Wachtel. Octavo of 312 pages. Brooklyn, Chemical Publishing Co., 1941. Cloth, \$4.00.

**Fractures.** By George Perkins, M.C. Oxon. Octavo of 384 pages, illustrated. New York, Oxford University Press, 1940. Cloth, \$6.50.

**A Practical Manual of Diseases of the Chest.** By Maurice Davidson, M.D. Second edition. Octavo of 575 pages, illustrated. New York, Oxford University Press, 1941. Cloth, \$13.50.

**Introduction to Psychobiology and Psychiatry. A Textbook for Nurses.** By Esther L. Richards, M.D. Octavo of 357 pages. St. Louis, C. V. Mosby Company, 1941. Cloth, \$2.50.

**Help Your Doctor to Help You When You Have Sick Headache or Migraine.** Duodecimo of 37 pages. New York, Harper & Brothers, 1941. Cloth, \$0.95.

**Help Your Doctor to Help You When You Have Food Allergy.** Duodecimo of 50 pages. New York, Harper & Brothers, 1941. Cloth, \$0.95.

**Help Your Doctor to Help You When You Have Gallstones and Disease of the Gall-bladder.** Duodecimo of 41 pages, illustrated. New York, Harper & Brothers, 1941. Cloth, \$0.95.

**Help Your Doctor to Help You When You Have Colitis.** Duodecimo of 30 pages. New York, Harper & Brothers, 1941. Cloth, \$0.95.

**Help Your Doctor to Help You When You Have Gastric or Duodenal Ulcer.** Duodecimo of

53 pages, illustrated. New York, Harper & Brothers, 1941. Cloth, \$0.95.

**Proctology for the General Practitioner.** By Frederick C. Smith, M.D. Second edition. Octavo of 466 pages, illustrated. Philadelphia, F. A. Davis Company, 1941. Cloth, \$4.50.

**The Heart in Pregnancy and the Childbearing Age.** By Burton E. Hamilton, M.D., and K. Jefferson Thomson, M.D. Octavo of 402 pages, illustrated. Boston, Little, Brown and Company, 1941. Cloth, \$5.00.

**A Short History of Psychiatric Achievement With a Forecast for the Future.** By Nolan D. C. Lewis, M.D. Octavo of 275 pages. New York, W. W. Norton & Co., 1941. Cloth, \$3.00.

**Endocrinology. The Glands and Their Functions.** By R. G. Hoskins, M.D. Octavo of 388 pages, illustrated. New York, W. W. Norton & Co., 1941. Cloth, \$4.00.

**Essentials of Dermatology.** By Norman Tobias, M.D. Octavo of 497 pages, illustrated. Philadelphia, J. B. Lippincott Co., 1941. Cloth, \$4.75.

**The Pharmacology and Anesthetic Drugs. A Syllabus for Students and Clinicians.** Second edition. By John Admani, M.D. Quarto of 86 pages, illustrated. Springfield, Charles C. Thomas, 1941. Cloth, \$3.50.

**Textbooks of Pediatrics.** By J. P. Crozer Griffith, M.D., and A. Graeme Mitchell, M.D. Third edition. Octavo of 991 pages, illustrated. Philadelphia, W. B. Saunders Company, 1941. Cloth, \$10.

**Air Raid Precautions (In Ten Parts).** Reprinted by Permission of the Controller of His Britannic Majesty's Stationery Office. First American Edition. Octavo. Brooklyn, Chemical Publishing Co., 1940. Cloth, \$3.00.

**Mental Disease and Social Welfare.** By Horatio M. Pollock. Quarto of 237 pages, illustrated. Utica, State Hospitals Press, 1941. Cloth, \$2.00.

**The Doctor Takes a Holiday. An Autobiographical Fragment.** By Mary McKibbin-Harper, M.D. Octavo of 349 pages, illustrated. Cedar Rapids, Iowa, The Torch Press, 1941. Cloth, \$2.50.

**Brucellosis (Undulant Fever). Clinical and Subclinical.** By Harold J. Harris, M.D. Octavo of 286 pages, illustrated. New York, Paul B. Hoeber, Inc., 1941. Cloth, \$5.50.

**A Textbook of Dietetics.** By L. S. P. Davidson, M.D., and Ian A. Anderson, M.B. Octavo of 324 pages. New York, Paul B. Hoeber, Inc., 1941. Cloth, \$4.25.

**Arthritis and Allied Conditions.** By Bernard I. Comroe, M.D. Second edition. Octavo of 878 pages, illustrated. Philadelphia, Lea & Febiger, 1941. Cloth, \$9.00.

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# NEW YORK STATE JOURNAL OF MEDICINE

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VOLUME 41

JUNE 15, 1941

NUMBER 12

## *Editorial*

### Dr. Wilbur Comments

In a letter to the Editors, dated May 17, 1941, Dr. Ray Lyman Wilbur, president of Stanford University, says of our recent editorial, "Medical Student Training"<sup>1</sup> "The principal point that you make, and that is not generally understood, is that military services require several times as many physicians per one thousand men as are needed in civilian practice, and that these cannot be drawn off in such a way as to leave bare spots and inadequate medical care over any considerable part of the country

I think, too, that we are going to be able to save a sufficient number of those who will matriculate this fall in the medical schools to keep our student bodies reasonably intact. If the draft age is not lowered we can recruit again in 1942. We are endeavoring to see what can be done to have at least some of the medical schools go on a four-quarter basis—at least during the existing emergency."

It is not too early to stress the seriousness of the problem confronting the medical schools in view of the possibility of a lowering of the draft age, possibly to 18 years. This is at least in contemplation. And while the recent Selective Service ruling has assured the status of those men who will enter the medical schools in the fall of 1941, the prospect for 1942 is not by any means so bright. With some of the schools on a four-quarter basis for the period of the emer-

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We, therefore, present it and urge that such of our readers as are members of the faculties of medical schools give it careful and thoughtful consideration. The suggestion raises a number of problems in school administration. It means practically continuous operation of plant and teaching staff, for one thing. Not that this is an insuperable obstacle, but it does involve considerable revision of schedules and, possibly, of finances as well—all of which takes time. For this reason it is well that discussion of the matter be commenced forthwith.

It now appears, also, according to Dr. Guy E. Snively, executive director of the Association of American Colleges, that a major change is in contemplation in higher education which will affect between 300 and 400 colleges of liberal arts. These institutions plan to offer a three-year, as well as a four-year, academic program, beginning in the fall of 1941, to enable students to finish their academic careers before being called for military duty.

The new program is expected to keep college enrollment from dropping, since it encourages young men to complete their college work before entering upon their military training. It is estimated

<sup>1</sup> Editorial New York State J. Med. 41 933 (May 1) 1941

[Continued from page 1214]

## REVIEWED

**Surgery in Modern Warfare** By Sixty-five Contributors Edited by Hamilton Bailey, F.R.C.S. Volume I. Quarto of 480 pages, illustrated. Baltimore, Williams and Wilkins Co., 1941. Cloth, \$10.

The first volume of this acutely practical and pertinent book is now on sale, the second volume will appear in a few months. These volumes are the work of sixty-five contributors who have been chosen by the editor, Mr. Bailey, as representative of British surgery. Volume I treats wounds, general and specific—wounds of the trunk, of blood vessels, nerve injuries and wounds of tendons, methods of immobilization of limbs, wounds of the hand and foot. The treatments suggested are based, in many instances, on experiences in the Spanish and the present World War, although knowledge acquired in the first World War has not been disregarded. With the division of the discussion of subjects among several contributors—as for instance, gas gangrene, treatment by x-ray, chemotherapy—a specific line of treatment may not be insisted on. This may be somewhat confusing. There are good chapters on shock, injuries of vessels, immobilization of injured limbs, and immediate and delayed operations of bowel injuries. The value of Volume I will be enhanced with the appearance of a full index in Volume II. The present status of local use of chemotherapy, Carrel-Dakin irrigation, and the closed treatment of wounds are considered with their appropriate advantages—the last word evidently not having been said. The value of such a timely book lies in the emphasis on such procedures as are indicated or necessary in action in wartime and how the indications may differ from those in civil life. The book, therefore, has a definite purpose and meets the demands made on it in a scholarly and satisfying way.

JOSEPH RAPHAEL

**The Medical Clinics of North America.** January, 1941. Volume 25, Number 1 (Chicago number). Octavo. Illustrated. Philadelphia, W. B. Saunders Co., 1941. (Six numbers a year). Cloth, \$16 net, paper, \$12 net.

This number of the Clinics has a practical and comprehensive symposium on pain by various specialists in Chicago. It is well worth reading.

Greene has written an extraordinarily good article on endocrine therapy in gynecologic disorders. He reviews in detail the most potent, as well as the least potent, parenteral and oral preparations now on the market. This article alone is worth the price of the book.

ANDREW M. BABEY

**Surgery of the Hand.** By R. M. Handfield-Jones, F.R.C.S. Octavo of 140 pages, illustrated. Baltimore, Williams & Wilkins Company, 1940. Cloth, \$4.50.

This monograph comprises 135 pages of description and numerous illustrations on the subject of the text. To one who has extensive ex-

perience, the volume will prove of interest because it covers in a thorough manner general principles, as well as details, which underlie the problem of infections of the hand.

With reference to the newer chemotherapy, the author has brought his therapy up to date by including this modality of treatment in his description. The subject matter is covered as essentially as Kanavel, but many new points of view have been added which increase the value to the practitioner as well as to the surgeon. We consider this treatise well deserving of commendation.

ROBERT F. BARBER

**Macleod's Physiology in Modern Medicine** Edited by Philip Bard. Ninth edition. Octavo of 1,256 pages, illustrated. St. Louis, C. V. Mosby Co., 1941. Cloth, \$10.

The new edition of this well-known work represents an important contribution to the textbooks of physiology. The text has been thoroughly revised and important additions made, so that the new edition is beyond question a most desirable text for those who wish an understanding of modern physiology. Although the book does not extend as far into the fields of clinical physiology as some others, more space is given to a clear exposition of the fundamentals. This is of the greatest importance, since the recent trend of physiologic texts to include masses of clinical information has tended to divert the preclinical student from a thorough understanding of the basic knowledge.

An important feature of the new book is the manner in which many complex relationships are summarized. This is particularly so in the section on the heart and circulation.

The section on the nervous system is recommended for those wishing a discussion of recent physiologic views. This is also true of the section on respiration. The addition of a section on water balance is particularly significant.

Professor Bard and his staff of collaborators are to be congratulated on the excellent sustained presentation of the subject of physiology.

GEORGE B. RAY

**The Louse. An Account of the Lice Which Infest Man, Their Medical Importance and Control.** By Patrick A. Buxton, M.A. Octavo of 115 pages, illustrated. Baltimore, Williams & Wilkins Co., 1940. Cloth, \$3.00.

National defense against the louse is an important timely matter ably presented by the director of the department of medical entomology of the London School of Hygiene and Tropical Medicine. The major portion of the book is devoted to the biology and medical importance of *Pediculus humanus*. Laboratory aspects are taken up in an appendix, while selected references are listed in a bibliography occupying  $6\frac{1}{2}$  pages. The text is illustrated by numerous charts and figures. The work is authoritative and should be required reading for every physician in military service or liable to be called upon to deal with refugee groups in Europe or the Far East.

ELLISTON FARRELL

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The new program is expected to keep college enrollment from dropping, since it encourages young men to complete their college work before entering upon their military training. It is estimated

<sup>1</sup> Editorial New York State J. Med. 41: 933 (May 1) 1941.

that a possible 300,000 to 400,000 students will avail themselves of the three-year course. The plan will provide a three-session yearly course of twelve weeks.

The new undergraduate program should work well as long as no change is made in

the present draft age of 21 years. If this is lowered to 18 years, such change will nullify the benefits to be derived. We urge medical men to give this matter serious consideration. It will, of course, be taken into account by Selective Service authorities.

### Care of Gastric Ulcer in Wartime

The exigencies of war bring about strange readjustments in every phase of human existence, and the administration of medical care to the individual sufferer is not excepted. In the instance of gastric ulcer, for example, Tanner and Jens,<sup>1</sup> of England, call attention to the fact that the manufacturers of munitions cannot be delayed by ailments of the gastrointestinal tract, *even though the strain brought on by the war has greatly increased the incidence of gastric ulcer*. To conserve hospital beds for the victims of war, to conserve public health, and to insure the activity of a much needed worker, these physicians have conceived a modified medical treatment of peptic ulcer which has so far proved successful.

Long-standing cases of stomach ulcer which had not responded to medical treatment in the past or patients who have had relapses were subjected to immediate operation. Those who were considered suitable for medical treatment were confined to bed for two weeks and placed on a diet of soup, milk, fish, eggs, butter,

bread, jelly, and custard—a diet that was divided into six feedings daily. Olive oil and magnesium trisilicate were employed as antacids, and phenobarbital was administered to allay nervousness. The patient was forbidden to smoke. Under this regimen, with gradual additions to the diet, half of the patients were able to return to full-time work in from four to twelve weeks. Following this, the employers were instructed to give these men sufficient time off for frequent meals and lunches. Among the others who did not do well on the home treatment, it was found that family cares and the difficulties encountered in nursing and in dietetics were the principal factors acting as deterrents to medical treatment. These patients were then promptly hospitalized.

In our defense program it will become increasingly important to keep workers physically fit and to insure against the loss of workdays through illness. We have much to learn from our English confreres whose ingenuity along these lines is becoming more and more apparent.

<sup>1</sup> Tanner, N. C. and Jens, J. Practitioner 146: 100 (Feb.) 1941.

### An Intricate Problem

We have in the past alluded to the serious menace of licensed automobile drivers who operate their machines when under the influence of alcohol. The possibility of a motor accident when an intoxicated driver is at the wheel is increased tremendously.

Cameron,<sup>1</sup> who has studied closely the various tests for the determination of the alcohol content in the human body, feels that the only practical ones from the legal standpoint are the blood tests. Even these, regardless of the method used, will not afford indisputable evidence that the substance estimated is in reality ethyl alcohol. Considering that the liability and possibly the liberty of a citizen may be at stake, these tests in themselves should not be deemed conclusive. "Various psychological and other

tests of behavior are in use to determine whether or not a person is intoxicated. It is generally recognized that an individual may be sufficiently under the influence of alcohol without his being intoxicated in the usual sense of that word."

The New York State Legislature has, from time to time, considered legislation dealing with this problem. The United States National Safety Congress, which reported in 1939 that a blood volume above 0.15 per cent alcohol should be considered as evidence that the driver is under the influence of alcohol, has modified its stand, so that even this organization "recommends prosecution only when the circumstances and the results of physical examination confirmed such evidence."

Zealousness should not precipitate legisla-

<sup>1</sup> Cameron, A. T. Canad. M. A. J. 43: 46 (1940).

tion based upon well-intentioned but unproved experiments. Cameron, after a careful survey, is of the opinion that all tests in this category cannot, at present, be rigidly interpreted as indicating alcoholism from a legal standpoint. Their use should only serve as contributory

evidence. Their main value might be said to consist in showing a complete absence of alcohol. The legislative committees of our county societies have long been studying this problem. No solution that would be just has as yet presented itself.

### "March Fracture"

There will be a number of lesions and diseases hitherto considered rare or uncommon in civilian practice which will confront the civilian practitioner after the selectees have finished their period of training and have returned to mufti. One of these is the treatment or aftertreatment of so-called "march fracture." This injury is not necessarily confined to military service and it may follow ordinary athletic activity.

Moore and Bracher<sup>1</sup> describe it as a fracture of the second, third, or fourth metatarsal bone without any known adequate cause. Usually the first complaint is a burning sensation in the foot, occasionally sudden, disabling pain may appear at once. Within twelve hours after the onset of pain, the dorsum of the foot becomes edematous and there is a definite lump in walking. Tenderness is elicited upon pressure over the fractured bone.

<sup>1</sup> Moore, P. L., and Bracher, A. N. *War Med.* 1: 50 (Jan.) 1941.

The unusual point about this condition is the scanty history and the apparent absence of any etiologic factor. People walk a great deal in their normal everyday life and engage in sports both competitive and noncompetitive. Hence, the fact that an individual states that after a long hike or a tennis game he has pain and swelling in his foot might lead to an erroneous diagnosis of metatarsalgia, contusion, or trauma to the ligaments. Roentgen examination, which assures the diagnosis, might be neglected because of this.

"March foot" is merely a term for a metatarsal fracture resulting from impact between the ground and the weight of the body. Since these forces are not generally considered as external potentials for trauma, the possibility of fracture may be overlooked. Incidentally, all of the cases reported by these observers had normal arches, so that pes planus, while a possible contributing cause, is not an essential one to the incidence of "march foot."

### Benzene Poisoning in Industry

The enormous increase in industrial activity to further our defense program has placed an added burden upon the medical profession to safeguard workers from the occupational diseases that hinder or totally incapacitate men whose services are urgently needed. In certain of the industries wherein benzene and its homologs are used, the number of cases of poisoning from these chemicals shows a marked increase. The effect mainly is upon the blood-forming tissues which are considerably depressed. Toluene and xylene, while injuring the hematopoietic system to a milder degree, exert a greater effect upon the nervous system.

Schwarz and Teleky<sup>1</sup> sought to determine the diagnostic significance of a decrease in the red and white cell estimation and hemorrhage in the detection of benzene poisoning. The blood changes differ when the different homologs are employed. Atypical clinical pictures should lead one to suspect that a mixture of

different toxic products has been used. In recent years these authors have reported that atypical cases are more frequently noted due to the increase in the use of mixed solvents. They point out the seriousness of the problem when the cumulative effects of these poisons is permitted to continue unchecked. Of 153 cases of severe poisoning, 67 resulted in fatality—a mortality rate of over 42 per cent.

Prevention and early detection of poisoning are the means with which to combat this occupational disease. The replacement of benzene and its homologs by innocuous or less dangerous solvents should be seriously considered in those industries where the employees breathe the evaporated fumes. Where benzene cannot be replaced or must be used for one reason or another, medical supervision is imperative and a monthly check-up on the blood of each worker must be made. In those manufacturing concerns using either toluene or xylene, a blood examination every four to six months will suffice to detect early changes due to poisoning.

<sup>1</sup> Schwarz, E., and Teleky, L. *J. Indust. Hyg. & Toxicol.* 23: 1 (Jan.) 1941.

## Request to Our Authors

*Who?* The Committee on Publications of your Society is faced with the problem of rising costs for paper and printing. At its last meeting, it directed the Managing Editor to advise our authors of this fact and to request that our contributors reduce the wordage of their articles as far as this can be done. The Committee further directed the Managing Editor to assist in obtaining brevity by stricter editing of submitted copy.

The Editors suggest that in preparing a manuscript each author set up in the left-hand margin of the first page the five questions: Who? What? When? Where? Why? If these questions are definitely answered in the first few paragraphs of the article, in the order named, the entire subject matter will be

presented to the reader in brief outline. It may then be expanded in subsequent paragraphs to the extent that the subject necessitates.

The reason for this suggestion is clear. It facilitates editing and assures the author that nothing of importance will be omitted, since, if it becomes necessary to cut the article further for any reason, the cutting can be done from the end. Try it for yourself on this editorial. If you omit this paragraph you still know Who? What? When? Why? If you omit the second and third paragraphs you still know all the essential facts. While it is recognized that in preparing scientific papers these suggestions cannot always be carried out literally, the Editors believe that practice in arranging material in this manner will be of benefit to our authors and their readers. It will certainly be of much appreciated assistance to

*The Editors*



### *Specimen*



## A NEW ANGLE ON TRIGEMINAL NEURALGIA

*A Study of 245 Cases with Observations on Seasonal Occurrence and Surgical Technic*

HENRY WARD WILLIAMS, M D , F A C S , F I C S , Rochester, New York

**D**URING the past seventeen years I have personally treated 245 cases of true tic douloureux. These have not been previously reported, and the following statistical account and certain facts that have been observed in the course of study are here presented. The symptomatology of the disease shall not be discussed and, since the cause of trigeminal neuralgia has not as yet been established, mention of this will also be omitted.

Trigeminal neuralgia has been known to the medical profession since Fothergill's classic description in 1773. During the past fifty years efforts to treat this disease have been progressively more successful.

The principles of treatment are simple—namely, anything that interrupts the

*Who?* Note that every one of the questions in the left-hand margin is answered in the first two paragraphs and the title. The entire article appeared in the June 1, 1941, issue.

*What?* Had an accident to the press or any other emergency destroyed the rest of the type one would still have known, in general though not in detail, who the author was, what he was writing about, where he lived, when the material was analyzed, and why it was done.

# NERVOUS AND MENTAL DISEASES OF SOLDIERS DURING ACTIVE WARFARE

GEORGE A. BLAKESLEE, M D, New York City

VOLUMES have been written describing the various organic and functional diseases studied and treated during the last World War, and it is obvious that I can add only my personal experience gained in the examination and treatment of soldiers ill with nervous and mental diseases while serving in various organizations or units in the United States and in the American Expeditionary Forces.

The first opportunity for the study of a disease, epidemic cerebrospinal meningitis, occurred while working among the men training in the Eighty-first National Army Division at Camp Jackson between the months of November, 1917, and March, 1918. The epidemic assumed an alarming proportion and, although the disease stands on the borderline between general medicine and neurology, the neurologist was placed in charge, and the neurologic aspects that are only too often overlooked were carefully studied. In order to control the further spread of the epidemic, an order was issued that all soldiers who had chill, fever, headache, pain, or vomiting were to be sent without delay to the Base Hospital for observation as suspected cases of meningococcus meningitis. This undoubtedly aided in the prevention of the further spread of the disease. Nose and throat cultures were made of the soldiers with nose and throat symptoms, and hundreds of the men with positive meningococcus cultures were isolated in a distant part of the camp. Although I had treated many cases during an epidemic in New York City, the epidemic in the Eighty-first Division was most severe, and it was not unusual in the fulminant type of cases for death to come within a few hours.

## Subjective Neuropsychiatric Symptoms

*Photophobia.*—Photophobia was often one of the earliest symptoms. Head pain more than headache occurred early, but at times spinal pain with sharp lancinating root pain occurred earlier than the head pain. Chill usually preceded the fever, headache, and vomiting. Weakness and difficulty in walking were usually present from the onset.

Read at the Annual Meeting of the Medical Society of the State of New York, Buffalo, April 30, 1941.

## Neuropsychiatric Signs

*Gait.*—Usually there was a slow measured step.

*Attitude.*—The patient more often was in a jackknife position, with the arms and legs flexed and the head supported in the palm of the hand. Opisthotonos was infrequent.

*Skilled Acts.*—Speech was usually without tone, a monotonous slow unmodulated speech, at times inarticulate.

*Abnormal Involuntary Movements.*—Tremors were met with early and were mostly seen in the tongue and fingers, twitching was seen infrequently in muscles or muscle groups. Trismus was seen in only 1 case. Automatism was rarely met with in this series. General convulsions were also singularly rare. Two cases were seen in convulsions early in the disease and 4 cases later.

*Reflexes.*—Reflex changes were present in nearly all cases from the onset of the disease and lasted throughout its course. There may be absent superficial reflexes, with increased deep reflexes or an inequality of the deep reflexes. Frequently, in prostrated cases there may be an absence of all reflexes. The most frequent change is a hyperexcitability of both the superficial and deep reflexes. The Babinski reflex was seen but was not common.

*Muscle Strength.*—There was varied lessening in the degree of strength as compared with normal, except in paralysis cases. Spastic and flaccid types of paralysis were met with late in the disease.

*Muscle Status.*—Rarely was there marked atrophy but this was met with in flaccid paralysis in the lower extremities. Tone was tested by resistance to passive movement and extensibility of joints was usually increased. The greatest increase in tone was seen in the postcervical group of muscles, usually within twenty-four hours after the onset of the disease.

*Abnormal Associated Movements.*—The Kernig and Brudzinski signs were present in nearly all cases and were of early diagnostic value.

*General Sensory.*—Early in the disease there was a hyperesthesia to all senses. The Tendo Achilles were especially tender to pressure early in the disease.

**Cranial Nerves**—Olfactory nerves were not tested. Optic, oculomotor, and abducens nerves and optic apparatus vision were rarely impaired except in panophthalmitis, and then there was total loss of vision in the eye involved.

**Fundus**—Fundus changes were present in nearly all of the cases. The retinal vessels were dilated and engorged with a resulting retinal hyperemia. Usually on the third or fourth day of the disease in about 20 per cent of the cases there was a haziness of the disk outline. Also at this time there may be a few small retinal hemorrhages. The fundus changes may be of unequal intensity in one eye as compared with the other. At the end of a week and during convalescence the fundus becomes nearly normal in its appearance.

**Pupils**—Early in the disease, the pupils were moderately or widely dilated from 4 to 6 mm in diameter and equal. In a few cases the diameter was 3 mm or less. Infrequently, contracted pupils were seen. An irregularity in the shape of the pupils was rarely seen. During the course of the disease and until convalescence, the pupils were frequently unequal and often changed in size daily. The pupillary reaction to light was somewhat sluggish in about 50 per cent of the cases. Convergence was less frequently impaired. Extrinsic eye muscle paralysis was not common and nystagmus was not frequently seen.

**Acoustic Nerve and Ear**—Hearing was often impaired in one or both ears. Slight or total deafness may develop early, but more often it was met with later on in the disease. Normal hearing returned usually in about two or three weeks.

**Trigeminal Nerve**—Involvement of the fifth motor nerve was rare in this series, two cases were seen.

**Facial Nerve Paralysis**—Facial nerve paralysis usually occurred after the fifth day and in most of the cases was of gradual onset. It was of the peripheral type and persisted for several weeks.

**Glossopharyngeal and Vagus Nerves**—No glossopharyngeal paralysis was seen. Respiratory paralysis was seen late in the disease. All of the cases succumbed suddenly to this condition.

**Spinal Accessory Nerve**—Torticollis or forced position of the head to the right or left was frequently seen. It was seldom met with before the sixth or seventh day. It is questionable how many of these cases were due to involvement of the spinal accessory

Probably most of the cases were caused by unequal hypertonicity of the postcervical muscles on the left or right side.

**Hypoglossus Nerve**—No hypoglossal change was seen.

## Psychiatric Signs

**Lethargy** was common. The patient often fell asleep during the examination but could be aroused by loud talking or other impressions.

**Coma** was less frequent and the patient could not be aroused.

**Delirium** was present in about the same number of cases as coma, there was disorientation, incoherent flight of ideas, fears, and much physical activity.

**Mental confusion** was still more infrequent. There was no mental change in about one-third of the cases.

## General Systemic

**Skin rash** occurred early and was one of the common symptoms of meningitis. The rash usually appeared as early as the second day of the disease and came in crops. It began to fade in twenty-four hours and usually disappeared within seventy-two hours. Exceptions were the large purpurae with accumulation of blood beneath the superficial skin which resembled blood blisters. These disappeared after a long period.

**Herpes** was a frequent symptom, usually occurred on the third or fourth day, and was not preceded by pain. On the face they were most frequently bilateral in location. The herpes usually disappeared in about two weeks.

**Vasomotor and Secretory**—Vasomotor changes were met with early in the disease. The countenance sometimes showed a dusky, ashen appearance. Occasionally, there was a diffuse cyanosis over the entire body. During convalescence the skin usually assumed a pink appearance and there was rarely a cachexia. Early and through to the termination of the disease the skin was dry.

**Skin Reactions**—Dermographia was present early, usually showed promptly, and was of fairly long duration. Gangrene was extremely rare and occurred late in the disease. One case was seen in which the toes of both feet were gangrenous.

## Neuropsychiatric Types

In this series the types of cases met with in the order of their frequency were (1) dull and retarded, (2) fulminated, (3) pros-

trated, (4) overactive, (5) convulsive, and (6) mentally clear and alert

The *sequelae* were (1) contractures and paralyzes in the lower extremities, (2) inequality of the reflexes, (3) arthritis, (4) deafness, (5) panophthalmitis with loss of vision, (6) chronic hydrocephalus, (7) endocarditis and pericarditis, (8) bilateral gangrene of the toes, and (9) slight memory defects

*General Course*—The duration of the disease in this series averaged about four weeks. At the end of this period, usually the men were out of bed and at the end of six weeks were usually returned to their command for light duty

*Treatment*—Frequent spinal fluid drainage and antimeningococcus serum was given intraspinally and intravenously

### Actual Combat

From Camp Jackson I was ordered to report to the Senior Consultant in Neuropsychiatry of the American Expeditionary Forces and was then assigned to a Combat Division. Upon presenting my orders to the Acting Division Surgeon, I had an interesting experience. The first information he desired was whether he outranked the psychiatrist. We held the rank of major. Upon learning that he did, by about two weeks, we got along very happily until hostilities ceased. Although I was assigned to work in the Field Hospital, it quickly became apparent that my work was too restricted and that more aid could be rendered, especially in the prevention of nervous and mental diseases, if I were permitted to circulate in the Division. The Division Surgeon supported this view and with no mental reservations. The greatest aid was given, and on several occasions the commanding general requested that I report to headquarters. I was told to visit the advanced firing lines and interview the officers, sit at their mess, observe their conduct and behavior, and report to the commanding general, mouth to ear and dispense with paper work. This surely was the height of cooperation when one considers the interest and concern the commanding general of the Division had in the nervous and mental status of the officers who were responsible for executing his commands during combat. Of equal, if not of greater, importance was the frequent contact with the company officers and top sergeants. Any change in their conduct or behavior was quickly noted. If an efficient soldier was observed to become careless, less alert, inattentive, inefficient and seemed

to be less interested in his duties, he was sent to the Field Hospital, which was usually a few kilometers in the rear of the combat forces. These soldiers were the potential or preneurotic group. Usually the change from active duty and responsibility to the more quiet environment of the Field Hospital was of great aid in their becoming less tense and securing a more relaxed mental state. Mental therapy was given daily. First, they were told that they had not been physically injured and that their body was healthy. They were kindly treated and not reprimanded. They were encouraged to eat and sleep well and were frequently given a mild sedative to enable them to secure a good sleep. Their patriotism was appealed to, and this was supported by the fact that the Division was advancing, the enemy was retreating, and the war would soon be over.

Nearly all of these soldiers were returned to their companies and, of utmost importance, the fighting strength of the Division was thereby maintained. The soldier was also told that he was in the Field Hospital attached to his Division, that as the Division moved forward, the Field Hospital moved with it, and that he could not possibly be sent to the rear. This undoubtedly was of much therapeutic value as an aid in persuading him to return to duty. Probably the most important factor in the favorable results obtained was that the soldier had not as yet developed a real neurosis but might be called a potential neurotic.

*Exhaustion*—Many soldiers were ill with exhaustion or fatigue. They were excellent soldiers and anxious to carry on with the responsibilities and duties assigned to them, but they were extremely fatigued. Usually, they had experienced many of the hardships and horrors of the war. Frequently, they had too little sleep, gastric distress or diarrhea, generalized weakness, poor appetite, and loss of weight. These soldiers were on the verge of a neurosis or psychosis, and I made every effort to have them sent to the Field Hospital for treatment. It was explained to them that they were overtired and exhausted and would soon be back to their companies. They were given rest, plenty of food, and moderate exercise. Occasionally, a mild sedative was administered to induce sleep. On one occasion during the height of combat when the Field Hospital was overtaxed, about 200 of these soldiers were sent by trucks to Neurological Hospital No. 3, a few miles to the

rear of the Field Hospital, and there they received care and treatment. None of these cases were sent to the rear. Nearly all of these soldiers were returned in good health to the Division in one or two weeks but, if they had not been so treated, undoubtedly they would have gone on to a neurosis or psychosis.

**Hysteria**—The largest number of the war neuroses that I treated while serving with the Division were the hysterics. The opportunity of studying hysteria—with its various manifestations, almost immediately following the onset of signs and symptoms—and the privilege of keeping the men under daily intensive treatment were to me the most unusual and satisfying experiences during the World War. The most common causes of hysteria during actual combat were psychoemotional shocks, minor physical injuries, and postconcussional reactions following the explosion of large shells and bombs. Hysterical amnesia was most frequently observed.

At times the soldier was mute and neither spoke nor uttered sounds. He remained silent and appeared dull and confused. Usually, he would follow commands or requests but was greatly inhibited.

Motor and sensory conversion signs and symptoms were common. *Astasia-abasia* was frequently seen and may be experienced suddenly by the soldier. As an example, a soldier went over the top with his company, and his close friend and buddy beside him was seriously injured and left on the field as his company went forward. He remained with the soldier a few minutes, removed from his buddy's wrist a watch, a present from his mother, and then again started to go forward. He could neither stand nor walk but crept forward, an illustration of an *astasia-abasia*, surely there was no cowardice there.

Hysterical monoplegias and hemiplegias, blindness and deafness, and sensory conversion experiences were common.

Another group with abnormal involuntary movements—such as tremors at rest and, on intention, muscle group choreiform movements, torticollis, and tics—was seen. These soldiers were treated in the Field Hospital. Nearly all the soldiers suffering from hysteria were returned to their units with the Division following treatment, with an explanation of the cause of their symptoms, suggestions were given, and an electric current from a French faradic battery was often applied to the affected parts of their bodies. Probably the most reasonable explanation of the short

duration of the neurosis and the soldier's return to duty was that the neurosis was of very short duration and had not become well fixed, and treatment had been quickly begun.

**Anxiety Neurosis**—This neurosis was common and was probably experienced in a greater percentage of officers. It was this type of neurosis with which I came in contact when the commanding general ordered me to visit the advanced lines of the Division and to interview the officers and observe their conduct and behavior. It was when the soldier was in the anxiety state that cases were seen and frequently were diagnosed as effort syndrome.

The soldier ill with an anxiety neurosis was worn with fatigue, complained of an inability to sleep well, and dreamed much. Usually, he had a poor appetite and lost weight. He was restless and in a state of anxiety and was frequently alarmed because of his condition, which was difficult for him to understand. He became jittery and often melancholy. Frequently, he was on duty at night, watching and directing the flares. After the psychiatrist had talked with him and advised his leaving his unit and going to the Field Hospital for a short rest, he usually would not consent to go. Frequently, it was necessary to have him relieved from duty. Mental therapy, rest, and mild sedatives to induce sleep were used, but the percentage of soldiers returned to duty following treatment in the Field Hospital was not high. It was usually necessary to send the soldier to a neurologic hospital for treatment.

**Gas Poisoning and Neurosis**—Officers were trained in the diagnosis and treatment of gas poisoning, and a gas officer was attached to each division. The soldiers were alert and on the lookout for attacks with gas waves by the enemy. Phosgene and mustard gases were used and the phosgene gas was the more deadly. I was ordered to the triage or sorting station after a gas alarm was given because, frequently, the soldier complained of irritation or a burning sensation in the nose, throat, and eyes. Other complaints were a husky voice, heaviness or pain in the thorax, with slight difficulty in breathing.

The gas officer and I examined each soldier who complained of symptoms, and a differential diagnosis was made between gas poisoning and a hysteria or neurosis. Many of the soldiers suffered from hysteria.

**Postconcussion Syndrome**—Soldiers rendered unconscious following the explosion of a large shell or bomb and who regained con-

sciousness in a short time usually remained in the Field Hospital for treatment

There usually was no evidence of external trauma, but occasionally pieces of shrapnel caused ragged lacerated wounds in any part of the body. X-rays of the skull or spinal fluid examinations were not done in the Field Hospital. After the soldier regained consciousness there frequently was loss of memory, confusion, headache, dizziness, and a sensation of fullness in the ears or tinnitus, and deafness was experienced

These cases should be considered ill with an organic disease. Many cases were returned to their unit in the Division from the Field Hospital, while others were sent to a neurologic hospital. Other soldiers were admitted to the Field Hospital stating that shells had exploded in close proximity to them, but they had not been rendered unconscious or thrown to the ground or against objects. They complained of vertigo, impaired vision or hearing, and most often a tremor or shaking of the body. They were treated in the Field Hospital, assured that there was no bodily injury, and told that their symptoms were caused by fright, with resultant nervous and emotional disturbances that would quickly disappear, and that they could and must quickly return to their companies in the Division. They were the war neuroses or hysterias so frequently confused with the postconcussional cases following cerebral commotion

*Psychoses and Posttraumatic Neurologic Disease*—The number of soldiers ill with psychoses was few as compared with the war neuroses. Many were of the manic-depressive type. The hypomanias and depressions were more frequently seen than the agitated form. The schizophrenic types of mental diseases were even less frequently observed. These cases were not held in the Field Hospital but were immediately evacuated from the front.

Compound and comminuted skull fractures, with severe brain lacerations and resultant mental symptoms and organic neurologic signs, were seen in consultation with the surgeons and sent to the Evacuation Hospital. The spinal cord and peripheral nerve injuries also were immediately evacuated following first-aid care.

One case was diagnosed as catatoniac dementia praecox. The soldier was stuporous but could be aroused, and he answered questions intelligently. There was rigidity of the muscles, and the extremities sustained various positions in which they were placed without

aid or support. There was a low-grade temperature. The soldier died in a few days and an autopsy was performed. The pathologic findings were those of encephalitis lethargica. This was the first case of epidemic encephalitis I had ever seen.

Another soldier was examined who complained of weakness in the lower extremities with associated numbness and tingling in the toes and feet. Within forty-eight hours he had a paraplegia and stocking anesthesia in the lower extremities. The upper extremities were soon similarly affected. There was a loss of the deep reflexes in both the upper and lower extremities. He died in a few days. I performed an autopsy and the spinal cord was removed. Dr. Louis Casamajor made the pathologic study. The diagnosis was acute infectious multiple neuritis, Guillain-Barré syndrome.

### After the War

After the armistice was signed I was ordered to Germany to serve with the American Army of Occupation, and for the first time during the World War I had the opportunity to work in a modern, well-equipped hospital. The neuropsychiatric service was quite an active one, but the type of reaction in the psychoneuroses was different. Nearly all of the psychoneuroses were depressed and melancholy, they were ill with nostalgia. The soldiers realized that the war was over and were anxious to return to the United States. The hospital was located one block from the depot, and hospital trains arrived twice a week to take the ill soldiers to ports of debarkation. This added to the difficulty in successful treatment of these cases in Germany, and an endeavor was made to send them to the United States as soon as possible. Because of the privilege of visiting the cities and towns in Germany, many soldiers were treated for acute alcoholism, and one soldier, in whom there was optic nerve atrophy with associated loss of vision, was seriously ill with wood alcohol poisoning. Two cases were diagnosed as paralysis agitans type of epidemic encephalitis and had complained of the symptoms for months. This is of interest when one realizes that these soldiers served during active combat. One case, diagnosed as cerebellar brain tumor, was sent to a base hospital in France because no brain surgeon was assigned to the American Army of Occupation. Cerebral vascular lesions with hemiplegia, central nervous system syphilis, and many cases of Bell's palsies were treated. One case of myotonia congenita was

seen, and it is surely much to the credit of this soldier that he carried on throughout the duration of the war.

After I received orders to return to the United States via Brest, it was necessary, in order to secure passage on a vessel, to take charge of a group of neuropsychiatric cases and take them to Army Hospital No. 1 in New York City. Again, the type of case was quite different from any seen during actual warfare. There were 24 cases in the group and they had been diagnosed, before sailing, as syphilophobia and homosexuals.

## Conclusion

It may be stated that probably none of the soldiers was ill with diseases that are not seen in civil practice, with the exception of the phosgene and mustard gas poisoning. There was this difference, however. Soldiers lived under the strictest discipline and were always under severe command, the environment was so unusual and the sights so horrible that nearly all of the diseases had what might be called a distinct war coloring. I feel that my most interesting experience was with the Division during actual combat.

Army regulations assign one division psychiatrist to a division, usually numbering between 20,000 and 30,000 men. It is impossible for one psychiatrist to do efficient neuropsychiatric work and particularly so when the division is in action. One or more assistant division psychiatrists and a well-trained neurologist should be permanently assigned to a division so that preventive neuropsychiatry could be more thoroughly and efficiently established and the soldier more thoroughly cared for during his illness.

## Discussion

Dr. Frederick C. Robbins, *Canandaigua, New York*—I would like to continue the story of the psychotic individuals from the time that Dr. Blakeslee left.

He and I were closely associated at Camp Jackson and also in the Army of Occupation. Unlike him, I continued in the service, being commissioned in the United States Public Health Service up until October, 1940, when they transferred their patients to the Veterans Administration. When the A.E.F. transferred all their psychotic patients to the United States, they were first sent to Fort Sam Houston, Texas, and to other general hospitals throughout the country. The numbers became increasingly larger, and the United States Public Health Service took this work over and established hospitals all over the United States.

Many of the psychoneurotic patients re-

covered and were sent home, leaving the patients that had developed and were developing into the dementia praecox type. The manics soon recovered and also were sent home. As the years have gone by the types of diagnoses have markedly changed. There are present, in the twenty-seven hospitals in the Veterans Administration devoted exclusively to neuropsychiatric disorders, practically 60 per cent of dementia praecox patients and 25 per cent of neurosyphilis patients, the remaining cases being classified as psychoneurotics, alcoholics, psychopathics, and mental defectives with psychosis.

The cost of hospitalization of these cases in a thousand-bed hospital is approximately \$400,000 a year. Multiplying this by twenty-seven will give a little idea as to the cost per year for the care of these cases, many of which could have been eliminated by the Draft Boards.

Within the past week I have gone over this matter with Miss Katharine Ecob of the Mental Hygiene Division of the Charities Aid Association, and the lack of cooperation and coordination between the psychiatrist of the advisory group and the physicians on the Draft Board is appalling. It would be fairly easy to eliminate the mental defectives if just two questions were asked. First, "In what grade were you when you left school?" Second, "How old were you when you left school?" If these questions were asked, practically all the persons who had been unable to progress in school could be examined for mental deficiency.

In many of the counties the Draft Boards are referring practically none of the men to the advisory psychiatrist, and in some counties there is no psychiatrist available.

It would seem to me that there should be some effort made by this Society to assist in this tremendous problem, and there must be enough civilian psychiatrists who would be willing to cooperate in this matter.

The week before last I visited a prominent camp on the eastern sea board, and in looking over the selectives I asked who was the division psychiatrist. I was told that there was none at that camp but that there were two young psychiatrists at the Base Hospital who had not had much experience in psychiatry.

It seems to me that, while the Draft Boards are at fault, there must be "something wrong in Rome" that there was not available at least a division psychiatrist of experience in the camp that I visited to direct the examinations of the mentally unfit.

I agree with Dr. Chambers that this section go on record as recommending some procedure whereby the different counties may be visited by a member of a Board in the view of bringing together the advisory psychiatrist and the Draft Board.

Dr. Henry W. Miller, *Brewster, New York*—This contribution is timely. I agree heartily.

with the suggestion that he has made. I feel that the importance of the neuropsychiatric problem has not been sufficiently emphasized.

We were informed yesterday by Dr Foster Kennedy that since the last World War each neuropsychiatric soldier has cost us \$30,000

We are soon to have an army of 4,000,000 men. Has not the experience of the former war taught us that every effort should be made to prevent our making a repetition of our mistakes in that war?

I feel that this section should like some action to coordinate the neuropsychiatric activities

## DRAFTING THE MENTALLY UNFIT

Inadequate, hasty, and slipshod psychiatric examinations of Selective Service men are permitting many mentally abnormal persons to enter the army, doctors announced after a meeting of psychiatrists connected with medical advisory and army induction boards, as reported in the *Elmira News*. The meeting was held at The Academy of Medicine in New York City.

Doctors told of men unmistakably mentally unfit being taken into the army over psychiatrists' objections. They said that men with mental ages of 7 and 8 years have been accepted when the minimum mental age acceptable is supposed to be 10. One doctor reported that erasures were made on his recommendations by army officers at an induction center.

Complete disregard of Selective Service provisions for psychologic examinations was reported by the doctors. In some centers 150 to 170 men a day are examined, which allows about one and a half minutes per man. The doctors estimated that at least fifteen minutes are required for a satisfactory psychiatric examination.

There should be at least one psychiatrist for each fifty drafted men examined in a day, according to Selective Service standards, said Dr Harry Stack Sullivan, Selective Service consultant on psychiatry.

Each mentally defective case admitted will cost the government eventually \$30,000, and more than a billion dollars has been spent since the World War on the mental cases wrongly admitted into the service, Dr Martin Cooley of the Veterans Administration said.

"But do not psychopaths make good soldiers?" one doctor asked from the floor. "Should we not take them into the Army? Some of the greatest military men have been undoubtedly psychopathic and some people say the whole business of war is psychopathic. Why hurt the Army?"

"Unquestionably psychopaths and morons make very good soldiers," Lieutenant Colonel P. S. Madigan, of the Medical Corps, the principal morning speaker, said in reply. "There is no question that high-grade morons get on very well in the Army." Experience has shown, however, that it is impossible to detect what types would be satisfactory, Colonel Madigan continued.

Dr Sullivan in the afternoon added that the British have found that paranoid types, which manifest extreme hostilities, make good soldiers but constitute the single largest cause of disciplinary trouble in the ranks.

"We are not sorting out the insane, the nuts, the whackies, the queer eggs," Dr Sullivan said. "We are sorting in the people who are peculiarly fit for the military vocation, which is a relatively small segment of the population."

"Under present circumstances we are very definitely trying to see how many we can keep out," Dr Karl M. Bowman, director of the psychiatric division of Bellevue Hospital, said. "We should look upon these examinations as vocational aptitude tests."

To avoid the stigma which might attach to rejection for mental deficiency, Dr Bowman recommended that physicians be allowed to reject men because of "lack of military aptitude." This, he said, would not handicap them in civilian life, where they might be important cogs in the defense machinery.

At least 5 per cent and preferably 10 per cent of all the drafted men should be referred by the local boards to psychiatrists, both Dr Sullivan and Dr Bowman contended. If this is not being done the local boards are failing in their function, they said.

One doctor related that a local board had passed a number of men whom he recognized as former mental cases of his, and he had to step in and reject them, although they had not been referred to him.

"The local board doctors are not aware of the significance and interpretation of some of the behavior they observe sometimes," commented Dr Howard W. Potter, professor of clinical psychiatry at Columbia University and chairman of the afternoon session.

Several speakers alluded to the severe strain imposed by modern war and said it was shared equally by almost all branches, so that mental defectives could not safely be put in special services, such as the hospital or quartermaster corps.

"The terrible conditions of modern warfare have contributed to the creation of a disease entity, 'war neurosis,' a condition very similar to the neuroses of civil life, but highly colored by the terrifying influences," Colonel Madigan said. More than 8,000 neuropsychiatric cases were returned from France in the last war, he said.

All symptoms such as sluggishness, discontent, loneliness, nostalgia, depression, shyness, dullness, and stupidity in drafted men should be watched closely, he said. Eccentric individuals do not fit into the Army, but may do well in a civilian branch of defense, he added.

## SCATTER SUNSHINE

Doctor "Your husband will never be able to work again."

Missus "T'll go tell him. It will cheer him up!"

—J.A.M.A.

# A NEW TREATMENT FOR HAY FEVER

ERNEST J. ELSBACH, M.D., New York City

**A**LLERGIC rhinitis, which is quite common in this country, causes a tremendous loss of working hours because of the discomfort caused by the disease and by the eventual reaction to the usually applied specific treatment, which takes a long time and is expensive.

Therefore, we have to endeavor to find better remedies for this condition. That the hitherto-known remedies are not satisfactory is evidenced from the fact that new kinds of treatment are recommended nearly every day. A remedy for this disease should make the treatment as simple as possible, i.e., it should not require complicated tests, should have a minimum of eventual reactions and, finally, should require less time for treatment.

In Europe, where allergic rhinitis is not as common as in the United States, such a treatment is used with excellent results. To my knowledge it so far surpasses the specific treatment that I feel this form of treatment should be put at the disposal of the profession here for the benefit of sufferers of hay fever. Before doing so it was, of course, necessary to find out whether this remedy might have the same success here since there are many more agents causing allergic rhinitis in the United States than there are in Europe. Therefore, I have, by permission of Dr. James W. Babcock, treated several of our clinic patients, especially during the hay-fever season—a time when specific treatment is not applied because of the known reasons—with this remedy and have had parallel excellent results. Because conditions are different all over the United States, physicians in different parts of the country had this remedy at their disposal and reported the same good success.

Undoubtedly, some pathologic conditions of the vegetative nervous system are predisposing factors for allergic rhinitis. The precipitating factors are varied and many and include grass pollens, food allergens, and other irritants, including the too strong radiation of ultraviolet and natural sunlight. Inflammation of the abdomen may also precipitate such attacks, as well as psychic factors such as fright, fear, anxiety, etc., because of the involvement of the vegetative nervous system.

From Otolaryngological Service of Vanderbilt Clinic,  
New York City, Chief Dr. James W. Babcock

The treatment hitherto usually employed is to determine, in the free interval, which allergen is at fault. This procedure is laborious for the physician and tedious for the patient. Frequently, it is difficult, if not impossible, to detect the principal allergen in substances like dust, hair, flour, etc. Finally, there are individuals who react to any number of irritants.

Investigations have disclosed that in every infectious disorder of the body the curative effect is exerted by influence of the nervous system on the endothelial system. The principal remedies that stimulate the former to resist infections are autohemotherapy, protein bodies of various kinds, and albuminous substances.

Allergic rhinitis is often caused by the pollen albumin of blooming grasses and flowers and the albumin of foodstuffs. Therefore, protein therapy in correct dosage may be successful in some such cases. It is known that attacks of allergic rhinitis may be prevented by a suitable diet, free from salt and spices. Elimination of disease of the abdominal organs or of intestinal stasis may have the same effect. Calcium and strontium preparations have also been used to diminish the irritation of the sympathetic nervous system.

A new biologic treatment is now presented which appears to act to a high degree as a stimulant to the natural functions of the sympathetic system to render it foolproof so that it no longer reacts to any irritant. It consists of the products of the metabolism of *Bacillus coli* found in the human intestines and grown on specific culture mediums. The pure cultures are incubated at body temperature, transplanted and, after heat killing the bacilli, diluted with physiologic salt solution. After aseptic filtration these metabolins in the clear liquid are used therapeutically.

The action of this natural metabolic product is by no means a nonspecific protoplasm activation, because its effect is the same even when the preparation is deproteinized by heating. Its action on the sympathetic nervous system seems to be pronounced and to have a desensitizing effect.

The treatment consists of eight to twelve intramuscular injections of 2 cc each of "Coli Metabolin Tosse." The first five injections

should be administered within five days. The balance may be given with intervals of one day.

The advantages of this method are clearly visible. Treatment before the onset of hay fever is not necessary but should be started when the first symptoms appear. A marked improvement is usually seen after two or three injections. All the tests to find out by which allergen the complaints are caused are unnecessary. Furthermore, the treatment takes only two to three weeks and, thus, is more convenient for the patients, particularly because no maintenance doses are required during the rest of the year. I have not seen one unfavorable reaction, but I find some that soon disappeared in 6 cases (8 per cent) reported by physicians all over the country. They consisted of local inflammation, increased sneezing attacks, slightly raised temperature or, in 1 case, diarrhea. Naturally, it is hard to say whether the injections are to blame for these reactions. Only 2 patients with these reactions refused further treatment, but 1 was cured although he had received only one injection.

The youngest of our patients was 9 and the oldest was 56, they were of different professions and sex. Of the 75 patients treated with Coli Metabolin Tosse we saw no result after six injections in 1 case, 1.3 per cent, cured, 53 cases, 70.7 per cent, and improved, 21 cases, 28 per cent. The average doses in cured cases were seven and two-tenths, in improved cases, nine and one-half injections.

The results in some cases were striking when

patients who had suffered from sneezing, running nose, conjunctivitis, etc., for a long time noticed a great improvement after the first two or three injections. We treated patients not only with acute hay fever but also those who had been suffering all the year round with the same success.

I know it would be more satisfying to report about these results after observation of the patients over a longer period of time. But, on the one hand, I think this remedy is so harmless and brings such quick relief that it should be in the hands of the profession as soon as possible. On the other hand, I believe the patient will not object to repeating a few injections if his complaints should recur, since they take so little time and need not be repeated during the rest of the year.

Permit me to add that Coli Metabolin Tosse has also shown good results in allergic asthma and allergic eczema, in the latter case combined with strontium bromide.

### Summary

The good results of treatment of allergic rhinitis with Coli Metabolin Tosse\* are described. Its advantages are (1) Tests to find out which allergen is at fault are not necessary. (2) Cosesonal treatment, as soon as complaints have started, is possible. (3) Only eight to twelve intramuscular injections are needed. (4) No maintenance doses are required. (5) Hardly any reactions are provoked.

20 East 87th Street

\* Coli Metabolin was supplied by Tosse Laboratories.

### DOCTOR'S TELEPHONE WHILE ON MILITARY DUTY

A "generous and patriotic gesture," as the *New York Medical Week* remarks, has been made by the Doctors Telephone Service and the New York Telephone Company for the benefit of doctors who enter military duty. It is told in a letter to the *Medical Week* by Sherman C. Amsden, managing director of the Doctors Telephone Service, as follows:

"What happens to the telephone number and the telephone calls of physicians and surgeons who accept commissions in the Army and Navy and leave for active duty?

"This subject was taken up with the New York Telephone Company by Doctors Telephone Service. For the benefit of those doctors who wish to cancel their telephone during their absence but at the same time would like to retain their numbers pending their return to civilian practice, the following official ruling has been received:

"(1) During a doctor's absence he can continue a listing in the Manhattan Directory, making use of one of the Doctors Telephone Service

telephone numbers and addresses, or the number and address of a colleague. The cost for this listing will be 25 cents per month. All telephone calls directed to the doctor's old number will be transferred to our number, or that of a colleague. The doctor's old telephone number will be held in reserve and calls continuously transferred until the doctor returns from service to take up practice again.

"(2) If no listing in the directory is desired, the doctor's old number will still be reserved during his absence and calls continually transferred to a colleague or to Doctors Telephone Service at no cost.

"As our contribution to the defense effort, we offer to any doctor in Manhattan who enters active service the following service, without charge:

"We will accept all calls transferred from the doctor's own number to ours and dispatch these calls in any manner the doctor may direct, keeping a report that he may review upon his return."

# Diagnosis

## CLINICOPATHOLOGICAL CONFERENCES

### FOURTH MEDICAL DIVISION OF BELLEVUE HOSPITAL

#### History

This was the first admission of a 45-year-old white man for severe pain in the lumbar back and the abdomen of two hours' duration. The family history was negative. The past history was negative except for a proved coronary thrombosis preceded by several anginal attacks two years previously. Since that time the patient had been on restricted activity and had been free from any severe anginal seizures. The patient had had hypertension for several years. The present illness began on the morning of admission, when, while straining at stool, he suddenly experienced a knifelike sharp pain in the lumbar region radiating down and around to both groins. It became duller in character but was followed shortly by a severe abdominal pain maximal in the left lower quadrant. The patient vomited once and broke out into a profuse perspiration of the upper half of the body. The abdominal pain persisted for two hours preceding entry to the hospital and was accompanied by a duller pain in the substernal region which did not radiate to the arms or shoulders. There had been no previous genitourinary or gastrointestinal symptomatology, and venereal disease was denied.

On admission the patient was a well-developed and well-nourished white man in acute circulatory collapse, moaning with pain. The skin was cold and clammy, the pulse was slow and regular and of good strength. His temperature was 97.6 F, pulse, 60, respirations, 22, and blood pressure, 120/90. The lips were of grayish color. The head, eyes, ears, nose, and mouth showed no abnormalities. The heart was moderately enlarged to the left on percussion, heart sounds were of poor quality with regular rhythm. There were no rubs or murmurs heard.  $A_2$  was greater than  $P_2$ . The lungs were clear to auscultation and percussion. There was present slight precordial hyperesthesia. The abdomen had marked hyperesthesia and was held rigidly splinted everywhere, but mostly in the left lower and left upper quadrants. There was marked tenderness everywhere, greatest in the left lower

quadrant. There was no rebound tenderness. The genitalia were that of a normal man. The rectal examination revealed the prostate to be soft and of normal size, and no masses or tenderness was present. The extremities showed no clubbing or peripheral edema. There were psoriasisiform lesions of both elbows. Both dorsalis pedis were easily palpable.

On admission the white blood count was 18,400 with 88 per cent polymorphonuclears. On bed rest and heavy sedation, the patient's pulse, temperature, and blood pressure slowly rose in the next twenty-four hours, after which time the patient was definitely no longer in shock. It was felt by the surgical staff that the patient was probably not a surgical case at first, and he was transferred to the medical service for observation. However, after a day on the medical ward, during which time the abdominal signs persisted, one of the surgical consultants palpated a soft mass in the right lower quadrant which made him believe that some kind of abdominal apoplexy was present and that the patient should be sent back to the surgical ward for closer (surgical) observation. An emergency roentgenogram of the chest revealed an unusual prominence of the shadow along the right border of the heart, and it was observed at this time that the blood pressure differed in the two arms—180/120 on the right and 220/150 on the left. The leukocytosis persisted. On the night of the second twenty-four hours in the hospital, the pulse, which up to that time had been slow, suddenly rose to 130 and remained above 100 during the duration of the illness. The red blood count on the second day was 4,300,000 and on the third day it had dropped to 2,890,000. A stool specimen on the fourth day showed a 4 plus benzidine reaction. While on the surgical service, the patient continued to feel better, the pain continued but had changed in character to a steady dull aching in the back and in the substernal region. He was given supportive measures consisting of daily infusions. The abdominal rigidity and tenderness persisted. On the evening of the fifth day he was observed to have signs of pulmonary edema at the right

June 15, 1941]

base, and on the sixth hospital day he died in acute pulmonary edema.

The laboratory findings were as follows. The white blood count ranged between 18,000 and 20,000 with 83 to 90 per cent polymorphonuclears during the first four days, then fell slowly to 8,800 with 86 per cent polymorphonuclears on the day of death. The red blood count fell as described and on the sixth day was 3,000,000. The urinalysis showed a specific gravity of 1.015, and the only positive finding was a 3 plus albumin. The blood Wassermann was negative, the blood non-protein nitrogen was 47. The electrocardiogram on the day of admission showed sea gull  $T_1$  and  $T_4$  and a notched QRS in lead III, sinus rhythm. Another electrocardiogram taken on the fourth hospital day showed  $P_1$ ,  $P_2$ , and  $P_4$  upright,  $T_2$  inverted, notched QRS, sinus tachycardia. This electrocardiogram was interpreted as suggesting active acute small infarction. A flat plate of the abdomen, taken in both the prone and erect positions, was interpreted as negative. A roentgenogram of the chest revealed a marked dilatation and prominence of the ascending aorta.

### Discussion

DR ARTHUR L. WASHBURN. The outstanding feature of this case was the lumbar pain, which was knifelike and catastrophic, radiated down and around to both groins, and was experienced suddenly while straining at stool. This pain, of such sudden onset, combined with a strikingly lower blood pressure in the right arm, immediately called our attention to the possibility of a dissecting aneurysm with pressure on the innominate artery when this case was transferred by the surgeons to a medical ward. At this time an emergency chest plate revealed an unusual prominence of the shadow along the right cardiac border. The subsequent course, however, caused the case to be transferred back to a surgical ward for closer observation, and it brought up for consideration other possibilities such as mesenteric thrombosis (vascular occlusion), acute pancreatitis, acute perforated duodenal ulcer, and coronary occlusion simulating an acute abdomen.

Of 157 cases of acute mesenteric thrombosis reported by Jackson, Porter, and Quinby, 51 per cent had generalized abdominal pain, 41 per cent had pain referred indiscriminately to every classic area of the abdomen, and none had pain referred to the back. The pain of acute perforated duodenal ulcer can

be sudden and severe and can strike first in unusual areas, including one shoulder. But it rarely, if ever, is referred first to the back and, when as overwhelming as in this case, is soon followed by boardlike rigidity of the abdomen and persistent vomiting. Only the pain of ultra-acute cases of pancreatitis would be comparable to the pain in this case, again the pain is abdominal and is rarely, if ever, referred primarily to the back, and persistent vomiting with a merciless progression into frank peritonitis is the rule in the severe cases. Alexander Lambert called attention to the rare types of pain in coronary thrombosis, including lower abdominal pain radiating down both legs, but more especially to the much more common cases of coronary occlusion simulating acute surgical abdomen. He says "Small wonder that these patients have been operated on for gallstone colic, or more often acute perforating duodenal ulcer, or acute pancreatitis." The next most important feature in the case was the course. The patient was admitted in acute circulatory collapse, following which his blood pressure slowly rose until he was definitely out of shock within twenty-four hours. Within forty-eight hours his blood pressure had risen from 120/90 to 220/150. At this point, the pulse, which had been 60 on admission and had remained slow, suddenly rose to 130, and overnight there was a sharp drop in hemoglobin and red cells. Although rigid splinting of the abdomen had been reported on admission, the patient was able to relax his abdomen when on the medical ward, and there was no rebound tenderness and no vomiting. While on the surgical service, although the white blood count and polymorphonuclear cells remained elevated, the abdomen failed to give evidence of frank peritonitis, and the patient continued to feel better. Marked generalized tenderness with moderate spasm, present since admission, persisted, and one of the surgical consultants palpated a soft mass in the right lower quadrant. Opinion differed as to the areas of most marked tenderness. At this time, since obstipation had been present, a small enema was given in a search for blood. This yielded no evidence of macroscopic blood, but the return was frankly positive for occult blood. During the last forty-eight hours the white blood count fell gradually to normal. The patient died in acute pulmonary edema with terminal abdominal distention.

The rise in pulse with a subsequent fall to a lesser level of elevation combined with the

drop in red cells, made it apparent that we were dealing with an internal hemorrhage, but it was equally clear that the hemorrhage tended to be limited. Mesenteric thrombosis became less probable in the absence of melena, hematemesis, and vomiting, with the fall to normal of the white blood count, and with no physical signs of advancing peritonitis. The lack of advancing peritonitis also tended to rule out acute pancreatitis. Although the recovery to a marked hypertension was against a coronary occlusion, it seemed equally illogical in advancing dissecting aneurysm with continuing loss of blood into the retroperitoneal space or abdomen.

In cases of coronary occlusion in the presence of extreme hypertension, a remarkable and illogical upward rise from the initial drop in blood pressure is by no means unknown. Owing to the difficulty of diagnosing dissecting aneurysm preceding death, there are relatively few records of blood pressure preceding the blowout, but that the blood pressure may fail to reach its previous level is proved by the third in Reisinger's series of 4 cases in which the blood pressure had been as high as 220/150 before admission and was maintained in the region of 160/120 following the acute onset.

In speaking of the characteristic pain of acute dissecting aneurysm and its similarity to that of acute coronary occlusion with sudden onset and collapse, it is stated by Osler that an electrocardiogram will not show changes incident to coronary occlusion in cases of dissecting aneurysm. This is not borne out by other observers. Reisinger reports a case with a preadmission electrocardiogram essentially normal. During the period of observation, in a second electrocardiogram the T waves in leads I to III were upright, the S-T segments in leads I and II were slightly elevated. A third electrocardiogram showed inversion of T waves in leads I and II without deviation of the S-T interval. A fourth still showed T waves in leads I and II inverted, and the T wave in lead IV was upright (minus). Two weeks before death, T waves in leads I and II were less deeply inverted and T waves in lead III were flat. T<sub>4</sub> was still upright (minus). There was progressive decrease in voltage of QRS complexes. These changes were not associated with any gross or microscopic evidence of infarction, and the coronary ostia and arteries were not involved. Although no structural lesion in the heart was found to account for the abnormalities in the electro-

cardiograms, the fact remains that they developed after the onset of the dissecting aneurysm.

In this case the electrocardiogram on April 4 was interpreted as suggesting active acute small infarction. Granting that the electrocardiographic data in the literature is not sufficient to afford dependable evidence in cases of dissecting aneurysm, we know that only a completely negative electrocardiogram is of any service in ruling out coronary thrombosis. Since changes suggesting acute myocardial infarction have been frequently reported in cases of dissecting aneurysm and since such changes are present in this case, all that can be said is that their presence certainly is not in any way to be interpreted as against the diagnosis of dissecting aneurysm. It is quite possible that the first acute episode, said to have been a proved coronary thrombosis, was actually on the basis of aortitis involving the coronary ostia, with pain simulating that of coronary thrombosis.

DR KATHERINE R. KELLEY: What was the actual clinical diagnosis?

DR WASHBURN: The salient feature of the clinical examination in this case was the marked difference of the blood pressure in the two arms. It is almost unheard of to find such marked differences in anything but aneurysm of the aorta. There are few conditions in which the abrupt onset of pain of such catastrophic nature occurs. Dissecting aneurysm of the aorta is characterized by just this type of pain. That was the consensus.

DR BEECKMAN J. DELATOUR: What about a ureteral calculus?

DR WASHBURN: I have never seen a case of bilateral pain from a ureteral calculus. Such pain is classically unilateral.

DR DELATOUR: I wish to stress the point that dissecting aneurysms of the aorta do not show any characteristic electrocardiographic changes unless the dissection extends to involve the sinuses of Valsalva and interfere with the nutritional supply of the heart itself.

DR WASHBURN: As I mentioned in my preceding discussion, the work of Reisinger indicates that there may be electrocardiographic changes that are not dependent upon involvement of the coronary ostia at all. These changes are presumably due to myocardial anoxemia secondary to the alteration in the circulatory dynamics.

DR LOUIS F. BISHOP, JR.: In my opinion the electrocardiography is of no great value

in the diagnosis of dissecting aneurysm. If the electrocardiographic changes are present, they are an interesting adjunct to diagnosis, but I think that in this case at hand we should rely solely on the history and physical findings. We have no reason to doubt that history of typical coronary thrombosis and the changes in the electrocardiogram are quite in keeping with an old coronary with a suddenly added cardiac strain.

**DR. ARNOLD KOFFLER** To my mind there are some arguments against the diagnosis of dissecting aneurysm. First, the pathogenesis of these cases is almost always arteriosclerotic. This man is young and does not show evidence of marked arteriosclerosis. Second, the aneurysm, if such it is, would have to be multiple because of the evidence pointing both to involvement of the ascending aorta and arch and also to the abdominal aorta.

**DR. WASHBURN** This man is 45 years of age and is well within the age group for dissecting aneurysm. Again quoting Reisinger, the ages of his 4 cases were 41, 50, 48, and 39. There may be multiple points of dissection from a single rupture, involving a return to the lumen, or multiple tears. In one case there was a transverse tear 10 cm below the arch and a second tear 5 cm above the bifurcation into the iliac arteries.

**INTERVIEW** How do you explain the 4 plus benzidine reaction in the stool?

**DR. WASHBURN** In about 10 to 20 per cent of the cases of abdominal aneurysm of the aorta, the celiac axis is involved. In these, the dissection may extend to involve the coats of the intestine with seepage of blood resulting. One aneurysm of the splenic artery perforated the colon. I do not believe there was any gross hemorrhage into the bowel.

**DR. CHARLES H. NAMICK** It seems to me that we are making the mistake that we are often prone to—losing sight of the main clinical features and trying to make a lot of irrelevant data fit into the picture. The history and physical examination in this case lead one directly to the diagnosis of dissecting aneurysm.

**DR. GEORGE C. McEACHERN** Does not the rise in blood pressure after admission to the hospital practically rule out coronary thrombosis?

**DR. BISHOP** I should say, yes, it would.

**DR. DELATOUR** Another argument against a coronary is the fact that the white count was high on admission and began to fall on

the fifth day. In coronary thrombosis, the usual course of the white count is just the reverse of this.

### Pathology

**DR. LESTER BREIDENBACH** It was my impression when I first saw this patient that we were dealing with some kind of vascular episode. About thirty-six hours after admission I saw him on the medical ward, and there was to my mind a soft mass palpable in the right lower quadrant. I felt that it would be safer to keep him on surgery where he could be explored if he showed any signs of developing peritonitis. The body was that of a white adult man, well-preserved, with marked rigor mortis. On opening the abdominal cavity there was about 500 cc of blood in the peritoneal cavity. The cecum and part of the ascending colon were distended and pushed forward by a retroperitoneal hemorrhage. This mass in the right lower quadrant could easily have been palpable in life. On the right side, after the parietal peritoneum was cut, there was clotted and liquid blood extending all through the retroperitoneal space from right to left. The liver was natural and the gallbladder was distended, without stones. The right kidney was low on the right side, extended into the pelvis, was exceedingly long, and had two sets of vessels, one to the upper portion and one to the lower portion. The right lower renal artery was thrombosed. In connection with the suggestion made of renal colic, this infarction of the kidney may have been the cause of the severe pain present on admission. On tracing the hemorrhage medially, it was found to come from the aorta, the aorta was exceedingly friable with marked atherosclerosis and was the seat of a dissecting aneurysm beginning at the arch and extending right down to the iliac vessels. There was no left kidney. The pancreas was entirely normal but the heart was enlarged and blue in color, and on section it showed a dissecting aneurysm with clot between the coats. The lungs were normal with slight hypostasis at the bases. There was no free fluid in the pleural cavities.

**Diagnosis** — Retroperitoneal hemorrhage from rupture of a dissecting aneurysm, horseshoe kidney, thrombosis of the renal artery, inferior, extension of dissecting aneurysm of the superior renal artery, massive infarction of lower half of the kidney.

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DR WASHBURN: As I mentioned in my preceding discussion, the work of Reisinger indicates that there may be electrocardiographic changes that are not dependent upon involvement of the coronary ostia at all. These changes are presumably due to myocardial anoxemia secondary to the alteration in the circulatory dynamics.

DR LOUIS F. BISHOP, JR.: In my opinion the electrocardiography is of no great value.

proximately 1,000 cc of foul-smelling sero-sanguino-purulent fluid. The liver and spleen were enlarged, the later weighing 1,000 Gm. There were several accessory spleens. The stomach was normal in size, the mucosa was markedly hypertrophied and the rugae were prominent. Polyps were not encountered. On the lesser curvature near the pylorus there was an old scar about 1.25 cm in diameter, stellate in shape. Its base was firmly adherent to the pancreas. The pyloric ring was patent. The pyloric end of the stomach was markedly thickened, measuring approximately 1 cm in diameter. This thickening tapered off gradually toward the fundal region where the thickness of the stomach wall was about 0.5 cm. Cut section through the thickest part of the stomach, i.e., the pyloric end, revealed dense grayish white tissue with some loss of demarcation of the different layers. In all other cut sections of the stomach the mucosa, submucosa, and muscularis were distinctly demarcated. The right ovary was enlarged and nodular, with a plum-sized cyst on its upper pole. The ovary itself was homogeneous and had the consistency of cheese. The left ovary was normal. The bone marrow was replaced throughout with firm white tissue.

**Microscopic Findings**—In multiple sections through the stomach the outstanding changes are found in the mucosa. The usual glandular outline is lost throughout.

The cells encountered are pleomorphic with many mitotic figures. They occur in strands and clumps separated by connective tissue fibers. In places these cells are polyhedral in shape and assume the pattern of pavement epithelium. Occasionally, signet cells are encountered. In the pyloric end, tubule-like structures are formed by medium-sized deep blue-staining cells.

Within the submucosa the cell type corresponds to the preponderant cells in the mucosa. Within the lymphatics the arrangement of the tumor cells is again that of pavement epithelium.

The mucosal lesion extends for a short distance into the duodenum and for a greater distance into the esophagus. Only a few lymphatics in the duodenum are filled by tumor cells whereas the lymphatics of the lower portion of the esophagus are densely packed.

The regional lymph nodes, the lymphatics of the lung, the adrenal, and the ovary show the same type of tumor cells.

In the ovary the cells do not assume any recognizable pattern, but collections of epi-

thelial cells are surrounded by connective tissue septums. Signet cells, though few in number, are easily recognized.

In the bone marrow the outstanding finding is the marked overgrowth by osseous tissue which almost obliterates the marrow space. Between these bone spicules nests of epithelial cells are arranged in pavement form.

The pulp of the spleen is filled with young cells of the erythropoietic and leukopoietic series. Collections of mature lymphocytes around the central arteries are no longer noted. The same hemopoiesis is seen to a lesser extent in the liver and adrenals.

## Discussion

DR SAUL JARCHO. Four years ago a series of similar cases was reported under the title of "Diffusely Infiltrative Carcinoma" (*Arch. Path.* 22: 674-696, 1936). In these cases the patient was often young, the patient described by Dr. Johannsen was 37 years of age. The tumor was most often primary in the stomach or mammary gland. When it occurred in the stomach it was usually a carcinoma of the flat unobtrusive type, often it gave few or no symptoms, could not be palpated during life, and often escaped roentgen diagnosis. These primary carcinomas were accompanied by a fine type of infiltrative metastasis in the medullary cavities of the bones and in the pleuropulmonary lymphatics. The clinical picture was ordinarily dominated by the metastases, so that in those cases in which the infiltration was heavy in the lungs the clinical appearances were those of the so-called lymphangitic carcinomatosis of the lung, the most notable clinical characteristic of those cases was tachypnea. In those cases in which the infiltration was heaviest in the bone marrow the picture was that of thrombopenic purpura hemorrhagica with myelophthisic anemia. In addition to the marked reduction of platelets, these patients showed appreciable numbers of normoblasts or immature leukocytes in the circulating blood, such cases were sometimes characterized by various degrees of hepatic and splenic enlargement, due not to tumor tissue but to numerous foci of hematopoiesis in these organs. This occasionally resulted in the erroneous diagnosis of leukemia.

In the usual case of carcinoma in which there is a bulky primary tumor in the stomach the pathologist expects to encounter nodules of tumor in the liver, in cases of the type now under discussion these gross metastases are

# Abstracts of Proceedings of the

## NEW YORK PATHOLOGICAL SOCIETY

THE NEW YORK STATE JOURNAL OF MEDICINE announces that under arrangement with Dr Francis Carter Wood there will appear in this Section abstracts of the proceedings of the regular meetings of the New York Pathological Society —EDITOR

REGULAR MEETING, DECEMBER 18, 1940

MAURICE N RICHTER, *President*

D MURRAY ANGEVINE, *Secretary*

### Spontaneous Nontraumatic Rupture of Posterior Papillary Muscle of the Heart Dr Caspar G Burn

A spontaneous rupture of the posterior papillary muscle of the left ventricle was found at autopsy in a 68-year-old white man. The posterior wall of the left ventricle, including the papillary muscle, showed a fresh infarct. It is believed that in this instance the rupture of the papillary muscle was the result of excessive strain exerted by the hypertrophied musculature and shortened chorda tendineae upon the necrotic papillary muscle. Rupture of the papillary muscle was not diagnosed clinically, although a peculiar heart sound was interpreted as a friction rub.

#### Discussion

DR MAURICE N RICHTER: Were there any histologic changes at the site of rupture other than the necrosis?

DR CASPAR G BURN: There was just necrosis.

DR HERMAN SCHWARZ: Was there much pain associated with this syndrome?

DR BURN: Apparently not, the patient was in collapse. He did not seem to be suffering too much, and there was no note of pain on the clinical chart.

### Carcinoma of Stomach Simulating Linitis Plastica with Squamous Cell Metaplasia, and Widespread Skeletal Metastases, Myelophthisic Anemia and Splenomegaly Due to Compensatory Hemopoiesis Dr M W Johannsen

This is the case of a 37-year-old Italian housewife admitted to the Third (New York University) Medical Division of Bellevue Hospital on October 2, 1940, with the complaints of generalized weakness of three weeks' duration and loss of weight. Two years before there was an episode of sour eructations and belching. Thereafter she was hospitalized four times, twice for hematemesis thought to be due to a bleeding peptic ulcer. In June, 1940, she was treated for left sciatic pain. Carious teeth were extracted. This operation led to profuse hemorrhage and necessitated five transfusions. Soon after this she was transferred to Bellevue Hospital.

The patient was markedly emaciated. The spleen was enlarged and smooth, and there was moderate tenderness in the midepigastrium. The pulse rate was persistently fast, ranging from 110 to 150. The temperature varied from 100 to 101 F with slight fluctua-

tions and terminally reached 104 F. The stools contained blood. The red blood cells ranged from 1,650,000 to 2,280,000, with a hemoglobin of 4.6 and 4.8 Gm, respectively. The color index was 0.9. The white blood cells numbered 5,850, and the Schilling index showed a marked shift to the left. The nucleated red blood cells were 6 per one hundred white blood cells, there were 0.3 per cent reticulocytes, the platelets numbered 145,000. The coagulation time was three and one-half minutes and the bleeding time, eleven minutes.

X-ray examination of the gastrointestinal tract showed findings interpreted as those of polyposis of the stomach.

A jejunostomy was performed on the eighteenth hospital day, and the patient expired thirty-six hours later.

Necropsy was performed twelve hours after death. The peritoneal cavity contained ap-

rather than that the disease is hereditary and due to an abnormality or a rearrangement of the chromosomes because of the peculiar collection of anomalies that are associated with the pancreatic anomaly. There are two possible ways in which the fetus could be affected in utero—one is infection, and one is deficiency of some food factor. Because there were several cases in which the mother was known to have a low fat diet I rather leaned toward the idea of a vitamin A deficiency not only as the result but as the cause of the disease. I have since had an opportunity to try out this hypothesis on rats, and I am convinced that I cannot do anything to the pancreas of the young by producing a vitamin A deficiency in the mother, at least in this species. Concerning the idea of this being due to a virus, you have collected proof in these cases that the inclusion bodies and the pancreatic lesion are associated, and this observation might be termed as strongly suggestive. It is now capable of confirmation by study of fresh cases, and it will be most interesting to watch the continuation of this work in the course of the next few years.

I have not hitherto been impressed by the association between the pancreatic fibrosis and the occurrence of inclusion bodies. We have somewhere between 25 and 30 cases of pancreatic fibrosis in our autopsy files, none of which show inclusion bodies, and we have about 6 other cases in which inclusion bodies have been found. It has so happened that the inclusion bodies have not been found in cases with pancreatic fibrosis. I have looked at the pancreas of every case for the last couple of decades and I am sure that is true, but we have not looked at the salivary glands routinely. I have looked at them in our cases of pancreatic fibrosis of the last couple of years since I have been aware of the syndrome, and I have not found inclusion bodies in the cases I have seen. That does not disprove Dr. Brody's hypothesis, and it will be of interest to see whether we can collect further evidence for or against it.

DR. VERA B. DOLGOPOL: What method of staining and fixation is used to demonstrate the inclusion bodies in the salivary gland?

DR. HENRY BRODY: We used a hematoxylin and eosin stain.

DR. ANDERSEN: May I add to my remarks one objection, which I should have mentioned before, and that is that I do not believe the lung changes are due to a virus disease but rather are the result of food deficiency. Since

we have been able to recognize the disease clinically we have given large doses of vitamin A to these patients, and we have not had any who have failed to survive for a matter of weeks. We have had a couple of babies with xerophthalmia who were given intensive vitamin A therapy. When they came to postmortem they had no signs of squamous epithelium anywhere. For example, in 1 case the xerophthalmia and the pneumonia began during the same week, at the age of 3 months. In spite of intensive vitamin A therapy the child died at 6 months. We could not see a sign of squamous epithelium anywhere.

DR. JACOB WERNE: Have the salivary glands in a similar control series of infants been studied and compared with those in the infants who have cystic fibrosis of the pancreas?

DR. BRODY: We have a short control series, about 25 cases,\* and in none of these have any inclusion bodies been found. The only inclusion bodies we have seen have been in the cases of cystic fibrosis of the pancreas. In the earlier reported series inclusion bodies have been found without cystic fibrosis.

QUESTION FROM AUDIENCE: What is the clinical symptomatology?

DR. BRODY: I will ask Dr. Andersen to answer that.

DR. ANDERSEN: The syndrome is by now clear enough so that none of our last 6 cases have come to postmortem undiagnosed. Usually the child appears normal at birth, and in many cases there is a history of a previous sibling (usually the one before the patient, but not always) having died during the first year of life from pneumonia. The present child appeared normal at birth. In about one-half the cases, during the first week or so, someone notices that the stools are unusually foul-smelling and large, but in many cases that is not noted until the child is a month old. Sometimes it is first observed when the child is given cereal, because cereal is not digested well in the absence of the pancreas and it aggravates the abnormal state of the stool. The child does well for a month or two and gains normally, then it fails to gain, it eats twice as much as the other children in the family are in the habit of eating, gains very slowly, and then gets pneumonia. I checked the time interval of the pneumonia carefully. The youngest of all is 7 weeks. The baby is brought into the hospital, usually because of the pneumonia, not because of the feeding difficulty. We have had some come in because

\* Sixty cases at time of reading proof.

not found. The series of cases of "Diffusely Infiltrative Carcinoma" was also found to include a considerable number of Krukenberg tumors of the ovary. It would seem from the sections displayed by Dr. Johannsen that Krukenberg tumor was also present in his case.

DR. IRVING GRAEF. I had the opportunity of studying Dr. Johannsen's case. I should like to add a word about the surgeon's findings. At operation, inspection of the stomach failed to reveal a mass that the surgeon felt he could implicate as tumor, and he thought he was dealing with diffuse hypertrophic gastritis and referred to areas of edematous infiltration of the stomach, he took a biopsy from a zone of marked edema without having a definite idea that there was a neoplasm present. It was only the microscopic study

of this case which disclosed an extensive involvement, and in line with the observations of Dr. Jarcho it is interesting to point out that here is a tumor that has a growth potential of such slow speed that it was able to compromise the entire stomach. Sections from the esophageal sphincter to the pyloric sphincter all revealed the transformation in varying degrees, and there was *limitis plastica* in portions of the stomach. Yet this patient was in comparatively good nutrition until the last weeks of her illness. It seems likely that the lesion developed at least two years ago and was in the process of evolution during that time. It furnishes a contrast with one's ordinary concept of the rapidly infiltrating small tumors that gain a foothold in the lymphatics and then pursue their rapidly fatal course.

### Concerning the Etiology of Cystic Fibrosis of the Pancreas Dr. Henry Brody (Abstract)

Cystic fibrosis of the pancreas is a disease of infants characterized by pancreatic insufficiency, frequently complicated by vitamin A deficiency, and is usually fatally terminated by pulmonary infection. Pathologically, the pancreas shows fibrosis and cystic dilatation of ducts and acini, which may contain inspissated secretion. An inflammatory infiltration is usually present. The main pancreatic ducts may or may not be atretic. The chronic pulmonary infection that is the usual cause of death manifests itself as a bronchitis, interstitial pneumonia and bronchiectasis.

A number of explanations have been proffered for the pathogenesis of the pancreatic affection: (1) production of an abnormal secretion that inspissates and leads to distention and atrophy of ducts and acini, (2) vitamin A deficiency in fetal life, (3) congenital malformation, and (4) inflammation of pancreas during fetal life.

I should like to present evidence that an intrauterine virus infection is the most likely cause. That a virus is responsible for the lesion was suggested by the finding of intranuclear and cytoplasmic inclusion bodies in certain tissues in 2 of 3 cases of cystic fibrosis of the pancreas observed in our laboratory—in 1 case in the salivary glands, bronchial and pulmonary epithelium, in the other only in the salivary glands. In our third case the salivary glands were not available for examination. Stimulated by this, we made a search through the literature. Five cases with intranuclear inclusions were found in which there was associated cystic fibrosis of the pancreas. In

2 others it is probable that cystic fibrosis was present and, in still 2 more, slight interstitial fibrosis of the pancreas was described.

The familial tendency could be explained if the mother is a carrier of the virus that was transmitted across the placenta. Obviously, the lesion would be present at birth. The associated anomalies that have been reported are almost all atresias or stenoses of epithelial passages rather than the usual heterogeneous congeries found in infants dying with multiple congenital malformations. These may all have a common inflammatory cause. In several cases accessory pancreatic nodules isolated spatially from the main body showed the same histologic changes, suggesting the action of a specific histotropic agent.

Intranuclear inclusions, entirely similar to those found in the human infant, are found in the salivary glands of animals where they have been proved to be caused by a virus.

The evidence marshalled in proof of virus etiology of cystic fibrosis of the pancreas is, unfortunately, incomplete. It is to be hoped that this presentation will stimulate the necessary investigations that will, by statistical weight, either prove or disprove the hypothesis herein outlined. The final proofs, of course, will follow the isolation of the virus.

### Discussion

DR. DOROTHY H. ANDERSEN. I came feeling rather skeptical, but I am now convinced that there is a great deal in Dr. Brody's hypothesis. I have felt from my own cases that something happens to the fetus in utero

dock and Smith were an interstitial pneumonia, and they state that they were strikingly like the virus pneumonias studied by McCordock and Muckenfuss in children and in animals. That similarity suggests that the lung lesion also might be evidence of virus infection.

**DR JOSEPH VICTOR.** Dr Brody has given an interesting and lucid discussion of his hypothesis and has left enough loopholes for further possibilities. The whole hypothesis, it seems to me, depends on the significance one places on the inclusion body. Does the inclusion body represent a virus infection or is

it secondary, in this particular instance, to a nutritional disturbance? I know of no example where an inclusion body is secondary to nutritional disturbance which has been reported. Recently, in our laboratory we have been studying riboflavin deficiency in swine and have found that 3 of 4 swine on a riboflavin-deficient diet coming down with the deficiency syndrome have shown changes in the corneal epithelium. The cellular changes are characterized by enormous inclusion bodies in the nuclei. I think this indicates another possibility in the interpretation of inclusion bodies in the salivary glands.

### Phosphatase in Normal and Malignant Tissues Dr Jacob Furth and Dr E A Kabat (*by invitation*)

The technic described by Takamatsu and by Gomori for the histochemical demonstration of phosphatase is specific for this enzyme.

Alkaline-phosphatase activity is characteristic of certain cells. Normal cells particularly rich in phosphatase are epithelium of the small intestine, that of proximal convoluted tubules, osteoblasts, and endothelium.

Of the tumors studied, phosphatase was present in conspicuous amounts in malignant osteoblasts of a transmissible chicken sarcoma and in an osteogenic tumor of the mouse. In the osteogenic chicken sarcoma, phosphatase is particularly abundant about the sites of bony and cartilaginous deposits. In three non-bone-forming strains of transmissible chicken sarcoma, phosphatase is absent.

Human fibroadenoma of the breast contained much phosphatase, as did lactating breast, while this enzyme was absent in carcinoma of the breast.

In the liver and spleen, endothelial cells alone contain phosphatase. Kupffer cells and histiocytes do not contain phosphatase.

The presence of phosphatase in normal and malignant osteoblasts supports the concept of its role in bone formation and may aid in the histologic identification of osteogenic cells.

The presence of large amounts of phosphatase in the intestinal epithelium is in accord with the views of Lundsjaard on the relation of glucose absorption to phosphorylation. Similarly, its presence in the proximal convoluted tubules of the kidney reopens the question of a similar mechanism explaining the reabsorption of the glucose secreted by the glomeruli.

Glycine, a known inhibitor of phosphatase

action, inhibits the phosphatase reaction in tissue sections.

### Discussion

**DR E A. KABAT.** I might say a word about the properties of the enzyme. It should be pointed out that the brown pigment one sees is not the actual enzyme but merely its activity made visible at the sites where it occurs in the tissue, and the question arises: Is the method specific for phosphatase? To that it may be said that the properties of the enzyme tissue section, as closely as we have been able to determine, parallel the properties of the autolyzed tissue extracts in their behavior, that is, large amounts of amino acids have been shown to inhibit phosphatase activity of tissue autolysates, and 0.25 M glycine completely inhibited phosphatase activity in sections of kidney, intestine, bone, and capillary endothelium.

The function of phosphatase has been of considerable interest. Robison pointed out that the phosphatase in osteogenic tissue might provide a local concentration of phosphate at the site of bone formation. Lundsjaard found that phlorhizin prevents glucose absorption in the small intestine and produces glycosuria by preventing reabsorption of glucose in the proximal convoluted tubules. He suggested that phosphorylation was an intermediate stage in the absorption of carbohydrate, glucose, through the intestinal wall and through the proximal convoluted tubules of the kidney, and that the phosphatase subsequently dephosphorylated the glucose phosphate. The localization of the enzyme histochemically in both of these places, the con-

of a failure to gain, and if they are brought in before there is much respiratory infection we can sometimes treat them successfully. We have 3 who have been treated, are now getting along well, and are over their pneumonia, or nearly so. They are between 1½ and 2 years old now, so that this is another point that makes me feel that the feeding has something to do with the lung infection.

The confirmation of the diagnosis is made partly by the appearance of the patient, who has a characteristic celiac appearance, and partly by the response to pancreatin. In all the cases I have studied there has been a low serum cholesterol, the total cholesterol is well below 100 in most of them, sometimes it is as low as 60. They respond to pancreatin, a high-protein diet, and vitamin A. If this treatment is persisted in and we get them early, before the respiratory infection is severe, this will permit them to grow and recover. We have 3 out of the 10 cases diagnosed during life in the past two years who are getting along nicely at the moment. This still indicates a poor prognosis but is better than the zero out of 10 of our previous cases.

DR GRAEF: We have all been impressed by Dr Brody's hypothesis, but there are two or three points in the evidence which I should like to ask him to clarify a little. I am under the impression that the salivary gland virus noticed in childhood manifests itself as a simple intranuclear inclusion without any inflammatory changes at all. Have any changes been observed in the salivary gland not only in Dr Brody's own cases but in those reported by others? Secondly, I did not understand whether inclusions were found in the pancreas in Dr Brody's cases or in other cases. The third point is, is it wise to include the bronchopneumonic syndrome in this particular picture when we know this type of bronchopneumonia is the form that brings most of the infant population to autopsy when it dies of pneumonia? In the last ten years I have been studying pneumonia with Dr Charles Hendee Smith, and I have collected 60 cases of bronchopneumonia in this series. In them I have seen 2 cases with inclusion bodies. One was of the salivary gland type, and this was a single lesion unassociated with any other inflammation. The other was a dubious case and one that I have never been satisfied about. Recently, I have seen another human case with inclusion bodies, a case sent to Dr Francis from St. Paul, in which inclusion bodies were found throughout the lung. And you know Goodpasture's re-

port of last year on the occurrence of inclusion bodies in infants, from which he was able to recover a virus transmissible to animals. As I recall the report, the disease was nothing but an acute infection. This brings me to my last point—is it not possible that we are dealing with a separate pneumonic process superimposed on a chronic lesion like those that have been demonstrated in the pancreas? You used the term "chronic bronchopneumonia" and illustrated it with mononuclear cells in the bronchi. In various lesions in animals and in the rapidly fatal bronchopneumonia in man, there is a mononuclear cell proliferation early in the disease. I mention this not in the spirit of carping but with the desire of separating the different factors concerned in the picture.

DR BRODY: I should like to make one comment on what Dr Andersen said. In our last case I think all the therapeutic procedures she suggests, including 100,000 units of vitamin A daily, both parenterally and by mouth, were used, and yet the child had a rather rapid exitus. I do not know whether that has any bearing.

In reply to Dr Graef's questions, in the second case I showed that in the salivary gland there was an inflammatory reaction, although I am not sure that it was directly proportional to the number of inclusion bodies present. In McCordock and Smith's experimental work I believe that there was also an inflammatory reaction, which in time disappeared, leaving only the inclusion bodies, so that I do not think the presence or absence of inflammation at the time of autopsy is indicative of whether there was any reaction to the virus in the course of the disease. In the cases that I have had the opportunity to examine there were no inclusion bodies in the pancreas. In some cases in the literature there have been, although I do not believe in any cases of cystic fibrosis, but the inclusion bodies were found in the pancreas only in fetuses, in stillborns, and in infants of a few days of age. Again, as I pointed out before, that seemed to be the course in the experimental animal where they tend to disappear in the visceral organs and remain only in the salivary glands for reasons that are unknown.

About the changes in the lung, I do not want to insist that this is part of the syndrome. We have had only 3 cases, and perhaps in our cases the interstitial pneumonia was not as striking as in some of the cases in the literature, certainly the cases of McCor-

dock and Smith were an interstitial pneumonia, and they state that they were strikingly like the virus pneumonias studied by McCordock and Muckenfuss in children and in animals. That similarity suggests that the lung lesion also might be evidence of virus infection.

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volute tubule and the intestinal loop, supports this contention Ellinger made azo dyes containing phlorhizin, and he found that the phlorhizin dye when fed to animals was localized in the proximal convoluted tubules and the glucosuria was produced simultaneously. Hence, we have a localization of phosphatase and phlorhizin in the proximal convoluted tubule of the kidney. These observations provide strong circumstantial evidence in support of Lundsgaard's hypothesis. Lundsgaard, after proposing this theory, retracted it, because the quantitative relationship in the amount of phlorhizin necessary to produce glucosuria was much less than that needed to inhibit phosphorylation. However, he calculated his data on the basis per gram of kidney tissue and, since the phlorhizin is localized only in the proximal convoluted tubules, this apparent quantitative objection is not valid.

DR AARON BODANSKY (*by invitation*) I should like to ask whether you have tried the effect of long fasting on the phosphatase content of the mucosa. I should also like to ask whether you have seen any tumors of the liver or diseases of the liver.

DR KABAT We have had 1 case of metastasis to the liver from an intestinal carcinoma, and the metastasis did not show phosphatase

DR GRAEF What do the parathyroids show?

DR JACOB FURTH The parathyroids were not examined.

DR ALFRED PLAUT There are unfortunately so many doubtful epithelial structures in the diagnosis of carcinoma of the breast. Did you find any intermediate phosphatase reactions corresponding to these borderline lesions?

DR FURTH The cases studied were clear-cut carcinomas. It will be of interest to compare the histologic appearance and the phosphatase content of a series of cases that offer diagnostic difficulties.

DR RICHTER Can this reaction be performed in sufficiently short time so that it would be of practical importance in rapid diagnosis?

DR KABAT You mean is it applicable to frozen sections? I do not think we have done any, but we did do a few gelatin sections and they seemed to be satisfactory—that is, embedding in gelatin and cutting by frozen section. Running the whole procedure through takes about three hours.

DR BURN Have you studied tissue cultures in relation to this reaction?

DR FURTH We have examined a few but the results were not conclusive.

## THE WOMEN'S STATE MEDICAL SOCIETY

Dr Marguerite P. McCarthy, of Solvay, was elected president of the Women's Medical Society of New York State at the annual meeting in Buffalo on April 23.

Other officers chosen were vice-presidents, Dr Mary E. Cotter, Brooklyn, and Drs Theresa Scanlon and Isabel Scharnagel, New York, and secretary, Dr Isabelle F. Borden, Albany.

Councillors are Dr Isabel Knowlton, New York, Dr Cora M. Ballard, Brooklyn, Dr Rosetta F. Hall, Liberty, Dr Annetta E. Barber, Glens Falls, Dr Elizabeth L. Shrimpton, Syracuse, Dr Anna M. Stuart, Elmira, Dr Kathleen L. Buck, Rochester, and Dr Alta Sager Green, Williamsville.

A resolution recommending that women physicians and surgeons of America be made eligible for the Medical Reserve Corps of the United States Army and Navy and be granted the full privileges thereof was passed at an executive session.

The meeting culminated in a dinner in the

evening at the Hotel Statler, when ten women who have practiced for half a century or more were honored.

Dr Alice Stone Woolley, outgoing president of the society, presided at the dinner. Mrs. Helen Z. M. Rodgers spoke on "The Professional Woman in This Democratic World" and Dr Margaret Warwick Schley on "The 'Lady Doc'—What Is She?"

The honor guests, who received gold keys, were

Dr Anna Sturges Daniel, Women's Medical College, 1879, Dr Marian Craig Potter, Dr Sarah Buckley, and Dr Mary Louise Lines, Michigan, 1884, Dr Rosetta Sherwood Hall, Women's Medical College, 1889, Dr Mary T. Greene, Michigan, 1890, Dr Ethel Doty Brown, Women's Medical College, 1890, Dr Alice Bennett, University of Buffalo, 1890, Dr Jeannette Himmelsbach, University of Buffalo, 1891, and Dr Fanny Hurd Brown, Michigan, 1891.

## SCHOOL PHYSICIANS TO MEET

The New York State Association of School Physicians will hold its Annual Meeting and Conference on June 23 at the Grand Union Hotel, Saratoga Springs, New York. A worth-

while program of interest to school physicians, nurses, dental hygienists, health officers, and general practitioners will be presented at the afternoon and evening sessions.

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# HOUSE OF DELEGATES

## MINUTES OF THE ANNUAL MEETING

April 28 and 29, 1941

**T**HE 135th Annual Meeting of the House of Delegates of the Medical Society of the State of New York was held at the Hotel Statler, Buffalo, New York, on Monday, April 28, 1941, at 10 00 A M

Dr Louis H Bauer, Speaker, Dr William Hale, Vice-Speaker, Dr Peter Irving, Secretary, Dr Edward C Podvin, Assistant Secretary

**SPEAKER BAUER** The House will be in order

### 1 Report of the Reference Committee on Credentials

**SPEAKER BAUER** The Chair recognizes Dr Peter Irving, Chairman of the Reference Committee on Credentials

**SECRETARY IRVING** Mr Speaker, there are no disputed delegations, and all who have been seated are entitled to vote

**SPEAKER BAUER** I declare the 135th Session of the House of Delegates to the Medical Society of the State of New York open for the transaction of business

The Secretary will call the roll

### 2 Roll Call

Secretary Irving called the roll by counties and stated "There is a quorum present"

### 3 In Memoriam of Dr Guy S Carpenter (Section 78)

**SPEAKER BAUER** I shall ask the members of the House to rise for a moment in memory of Dr Guy S Carpenter who passed away since our last session

The delegates arose and stood for a moment in silence in memory of Dr Guy S Carpenter

### 4 Approval of the Minutes of the 1940 Session

**SPEAKER BAUER** The first order of business is the approval and adoption of the minutes of the 1940 Session of the House

**SECRETARY IRVING** Mr Speaker, I move that the reading of the minutes of the 1940 Session of the House be dispensed with, and that they be approved and adopted as published in the June 15 and July 1 issues of the NEW YORK STATE JOURNAL OF MEDICINE

**DR. CLARENCE G BANDLER, New York** I second that motion

There being no discussion, the motion was put to a vote, and was unanimously carried

### 5 Address by Dr Nathan B Van Etten, President of the American Medical Association

**SPEAKER BAUER** I should like to have Dr Chas Gordon Heyd act as a committee of one to escort the President of the American Medical Association to the platform

(The delegates arose and applauded as Dr Chas Gordon Heyd escorted Dr Van Etten to the platform)

**SPEAKER BAUER** Members of the House, I

want to present to you the President of the American Medical Association. It is always an honor to have the president of that association attend our meetings, but the honor is doubly great when he is a member of this House of Delegates and a past-president of our own Society.

It gives me great pleasure to welcome him here to the rostrum. I cannot offer him the privilege of the floor because he already has it, but I can offer him a seat on the platform during the rest of this session, and I hope he will occupy it.

**DR. VAN ETEN**, the House will be glad to hear from you at this time.

**DR. NATHAN B VAN ETEN** I greatly appreciate the esteem of this House. No one could ask for anything more. I am not at all sad about the fact that this is my last appearance before this House as an officer of Organized Medicine. A career of more than forty years in medical societies has given me a great deal of stimulation which I could hardly have experienced in any other way. Although my bones are old, my enthusiasm for the progress of medicine is as fresh as ever.

The evolution of medicine and of the public health through the last fifty years cannot fail to inspire my imagination in looking forward to accomplishments that will make the past look pale and colorless.

Fifty years ago we were just as up to date as we are today, but none of us can practice the kind of medicine we learned at that time. I shall not review the details of this period of modern medicine, much of it merely historically interesting, but here we are at the beginning of new chemotherapy, new and daring surgery, new physical revelations, new prospects which are so amazing that no one can fail to look eagerly into the immediate future.

I am profoundly grateful for fifty years of medical experience and frankly jealous of those of you who will see the developments of the next half century.

The Medical Society of the State of New York has been exceedingly fortunate in that no adverse legislation has interrupted its progress, that its JOURNAL has so greatly improved, that its department of public relations is taking so important a place in the medical social intelligence of the whole country, and that its general management has met such a measure of success.

No one can plot the social dangers of the next five years, but the fact that 95 per cent of the active practitioners of the United States are loyal and willing to serve the country in her military forces is heartening evidence of the high character of the most learned of all professions.

The appalling prospect of war disturbs us to the depths of our emotions, but we must not let even the experience of war dislocate our mentality, so that we shall forget what we have been fighting for all of our professional lives.

We have been fighting for the American way

of life in a free democracy We must be aware of the dangers of domination by the state in a national emergency, and we must resist it wherever it threatens our ideals for national health We may, perchance, be soldiers for a little while, but let us keep our heads and remember that we shall be physicians for the rest of our lives

Abraham Lincoln said "As I would not be a slave, so I would not be a master This expresses my idea of democracy Whatever differs from this, to the extent of the difference is no democracy"

War is devastating, but the cohesive influence of our altruistic tradition will help us to survive and to continue to maintain the really high health standards of the American people in the American way (Applause)

SPEAKER BAUER Thank you, Dr Van Etten I will ask the Secretary to read the Reference Committee appointments

## 6 Reference Committees

SECRETARY IRVING These are the Reference Committee appointments

### REFERENCE COMMITTEE ON CREDENTIALS

Peter Irving Chairman New York County  
John L Edwards Columbia County  
Charles F McCarty Kings County  
Edward C Podvin Bronx County

### REFERENCE COMMITTEE ON REPORT OF PRESIDENT

John B D Albora Chairman Kings County  
Stephen H Curtis Rensselaer County  
Howard Fox, New York County  
Leon M Kysor Steuben County  
Merwin E Marsland Westchester County

### REFERENCE COMMITTEE ON REPORT OF COUNCIL—PART I

Postgraduate Education  
Harry C Guess Chairman Erie County  
John J Buettner Onondaga County  
Irving Gray Kings County  
Bernard S Strait Yates County  
James Walsh Cortland County

### REFERENCE COMMITTEE ON REPORT OF COUNCIL—PART II

Public Health Matters  
Leo F Schiff Chairman Clinton County  
Robert Brittain Delaware County  
Morris Maslon Warren County  
Harvey B Matthews Kings County  
Charles W Martin Nassau County

### REFERENCE COMMITTEE ON REPORT OF COUNCIL—PART III

School Health Program  
Alfred M Hellman Chairman New York County  
John D Carroll Rensselaer County  
William B Cornell Albany County  
Vincent S Hayward Bronx County  
Ralph Sheldon Wayne County

### REFERENCE COMMITTEE ON REPORT OF COUNCIL—PART II

Publications and Medical Publicity  
Arthur F Heyl Chairman Westchester County  
Samuel E Appel Dutchess County  
George Bachr New York County  
Maurice J Dattelbaum Kings County  
William A MacVay Monroe County

### REFERENCE COMMITTEE ON REPORT OF COUNCIL—PART I

Medical Expense Indemnity Insurance  
Samuel B Burk Chairman New York County  
John T Donovan Erie County  
Emil Koffler Bronx County  
Andrew Sloan Onondaga County  
Scott I Smith Dutchess County

### REFERENCE COMMITTEE ON REPORT OF COUNCIL—PART VI

Medical Relief  
Louis A Van Kleeck Chairman Nassau County  
Samuel M Allerton Broome County  
George A Burgin Herkimer County  
W Bayard Long New York County  
Charles A Prudhon, Jefferson County

### REFERENCE COMMITTEE ON REPORT OF COUNCIL—PART III

Legislation  
Malpractice Defense and Insurance  
Edward R Cunniffe Chairman Bronx County  
W Guernsey Frey, Jr, Queens County  
B Wallace Hamilton New York County  
Harold F Morrison Orange County  
Charles C Trembley, Franklin County

### REFERENCE COMMITTEE ON REPORT OF COUNCIL—PART VIII

Medical Preparedness  
James R Reuling Jr Chairman Queens County  
Romeo Roberto Westchester County  
Albert G Swift Onondaga County  
Thomas B Wood Kings County  
Warren Wooden Monroe County

### REFERENCE COMMITTEE ON REPORT OF COUNCIL—PART IX

Workmen's Compensation  
Coburn A L Campbell Chairman Suffolk County  
John F Kelley Oneida County  
Charles L Pope Broome County  
Harrison M Wallace Oswego County

### REFERENCE COMMITTEE ON REPORT OF COUNCIL—PART X

Memorial Dr Guy S Carpenter  
Election of Councilor  
Nominations  
Amendment to State Education Law  
Amendment to Nurse Practice Act  
Annual Meeting Arrangements  
Delegate Vermont State Medical Society  
Norman S Moore Chairman Tompkins County  
Thomas M D Angelo Queens County  
Walter D Ludlum Kings County  
Dan Mellen Oneida County  
Richard H Sherwood Niagara County

### REFERENCE COMMITTEE ON REPORT OF COUNCIL—PART VI

Motor Vehicle Drivers Medical Examination  
Deal and Hard of Hearing Commission  
Medical Practice Act Enforcement  
Eichacker vs New York Telephone Co  
Basic Science Law  
Harry S Bull Chairman Cayuga County  
Emily D Barringer New York County  
Kenneth F Bott Greene County  
E Harrison Ormsby, Montgomery County  
Stanley C Pettit Richmond County

### REFERENCE COMMITTEE ON REPORTS OF THE BOARD OF TRUSTEES TREASURER AND COUNCIL—PART XII

State Society Assessment  
Military Service  
Treasurer and Trustees  
William Klein, Chairman Bronx County  
Walter P Anderton New York County  
Otto A Faust Albany County  
Joseph C O Gorman Erie County  
Joseph Wrana Queens County

There is no report of the Censors this year we are glad to say

### REFERENCE COMMITTEE ON REPORTS OF SECRETARY AND DISTRICT BRANCHES

Stephen R Monteith Chairman Rockland County  
W Grant Cooper St Lawrence County  
Frederic W Holcomb Ulster County  
William A Moulton Tioga County  
Denver M Vickers Washington County

### REFERENCE COMMITTEE ON NEW BUSINESS I

Leo F Simpson Chairman Monroe County  
David W Beard Schoharie County  
Edgar Dieber Chautauqua County  
Moses H Arakow Bronx County  
Thomas A McGoldrick Kings County

### REFERENCE COMMITTEE ON NEW BUSINESS II

Peter J DiNatale Chairman Genesee County  
Albert A Cinelli New York County

Joseph P Henry, Monroe County  
A. W Martin Marino, Kings County  
F Leslie Sullivan, Schoenectady County

#### REFERENCE COMMITTEE ON NEW BUSINESS C

John J Masterson, *Chairman*, Kings County  
J Lewis Amater, Bronx County  
John L Sengstack, Suffolk County  
G Scott Towne, Saratoga County  
Carleton E Wertz, Erie County

Mr Speaker, I move that the reports of the officers, council, trustees, legal counsel, and district branches that have been published and distributed to the members of the House be referred to the respective reference committees without reading

DR. WALTER P ANDERTON, *New York* I second that motion.

There being no discussion, the motion was put to a vote, and was unanimously carried.

#### 7 Supplementary Report of the President

(Section 46)

SPEAKER BAUER Dr Winslow, will you escort the President of the Medical Society of the State of New York to the platform?

(The delegates arose and applauded as Dr Floyd S Winslow escorted Dr James M Flynn to the platform)

SPEAKER BAUER Dr Flynn, it seems as though you should be up here wielding this gavel

PRESIDENT FLYNN Thank you!

SPEAKER BAUER I know the House is very anxious to hear from you at this time

Gentlemen, I present to you your President (Applause)

PRESIDENT FLYNN Mr Speaker and Members of the House, may I thank you for this wonderful ovation

I have no supplementary report to make I might say that all of the committees of the Council have done a great piece of work, but there is one committee that stands out in my mind as doing just a little bit more work every year, and that is Dr Mitchell's *Committee on Public Health and Education* (Applause)

I feel that the Council should go deeply into the workings of that committee, and see just what can be done to give Dr Mitchell a little more support not alone in increasing the numbers of his committee but in a financial way I think if the House would give permission to the Council to give the affairs of this committee a thorough study it would certainly be worthwhile because in my mind Dr Mitchell's committee is probably doing more for the Society as a whole than anything that we have undertaken to do

The report that I have made, of course, is printed in the JOURNAL and also in the reports that have been distributed to you here There is nothing further that I wish to add

Again I thank you for your kind ovation and cooperation during the year (Applause)

SPEAKER BAUER Thank you, Dr Flynn!

The remarks of the President are referred to the Reference Committee on the Report of the President

#### 8 Address of the President-Elect

SPEAKER BAUER Will Dr Hellman, as President of the Medical Society of the County of New York, escort the President-Elect of the Medical Society of the State of New York to the platform

(The delegates arose and applauded as Dr Alfred M Hellman escorted Dr Samuel J Kopetzky to the platform)

SPEAKER BAUER Dr Kopetzky, we welcome you to the platform which you graced for so many years The House is very anxious to hear from you at this time

PRESIDENT-ELECT KOPETZKY Mr Speaker and Gentlemen, at this time, at the onset of what I hope will be as successful an administration as that which is just terminating in this meeting, there is very little in the form of a program that I want to offer

We are facing very difficult times We are in an emergency At all times in this country when an emergency arose it became the prime duty of patriotic citizens to see to it that all the aspects and facets of freedom were maintained. When the Army of the Republic disbanded after its march down Pennsylvania Avenue in '61, that was an achievement of democracy

After the last World War when four and one-half million men were demobilized, and the aspects of military service disappeared and the uniforms dropped from sight, that again was an evidence of vital democracy

Many, and particularly the medical profession, are fearful that in the evolution of procedures necessary in the emergency, demobilization cannot as easily or will not as easily be accomplished after the termination of the emergency which we now face It should be our prime duty to use as a standard of measurement of any procedure and any scheme involving the medical profession—it should be our measuring rod to see to it that it is a temporary emergency measure, easily demobilized

If the thinking portion of the profession, who know what we want to maintain, will work together to the end that every scheme and every idea advanced under the cloak of a defense program is so constructed that with the disappearance of the emergency it also shall disappear, we shall stand as the President of the American Medical Association said, with all the hard-won advances we have made safe

This is the prime message I have to deliver to you at this time We shall have to adjust to temporary expediences, but in that adjustment let there be no element of permanency

I thank you! (Applause)

SPEAKER BAUER Dr Kopetzky, we thank you, and will be glad to have you sit up here on the rostrum with us

Mr Secretary, are there any supplementary reports?

SECRETARY IRVING There are two supplementary reports, Mr Speaker One is from the Council on Legislation, which has been distributed to the members of the House. The other will be from the Treasurer, who would like to read that report himself The supplementary report of the Council, Part VII—Legislation, as distributed to the delegates is as follows

#### 9 Supplementary Report of the Council Part VII—Legislation

(Section 77)

The Council begs to transmit the final report of its Committee on Legislation, Dr John L Bauer, Brooklyn, *Chairman*, Dr Walter W

Mott, White Plams, and Dr Leo P Simpson, Rochester

The following is a report on the various bills up to April 9, 1941. It cannot be complete until after the expiration of the 30-day period allowed the Governor for action on the bills, which are in his hands

### BILLS SIGNED

Senate Int 352—Page, Assembly Int 712—Milroe, prohibits *podiatrists* from *advertising* in any publication or using flamboyant or large display, or glaring or flickering sign or a representation of human foot or leg or an appliance used in treatment. Chapter 103 of the Laws of 1941

Senate Int 453—Hampton, Assembly Int 501—Wright, prohibits *medical expense indemnity and hospital service corporations* from employing *solicitors* or accepting business from brokers on commission basis, *solicitors* are to be paid on salary basis only and exempt from obtaining license. Chapter 70 of the Laws of 1941

Senate Int 684—Hastings, Assembly Int 849—Wadsworth, reduces local share for *home relief* for 1941 from 80 to 40 per cent, for 1942 from 100 to 60 per cent, for 1943 from 100 to 80 per cent, provides that determination of *medical care* shall be with advice of physician, strikes out the provision that one-half of Federal funds shall be used for expenses of State Department, and makes other changes. Chapter 82 of the Laws of 1941

### BILLS IN HANDS OF GOVERNOR

Senate Int 162—Hastings, Assembly Int 173—C D Williams, authorizes *school district trustees*, as well as education boards and union free school districts, to furnish instruction for *physically handicapped children*, including remedial instruction, and provides for state aid to help pay teachers giving such instruction.

Senate Int 287—Thompson, Assembly Int 191—Moffat, allows manager of laboratory to appeal for state aid to Governor, instead of to the laboratory appeal commission as at present

Senate Int 289—Halpern, Assembly Int 197—Wagner, allows award in *workmen's compensation* cases for protracted temporary total disability in connection with permanent partial disability of 25 weeks for loss or partial loss of hearing

Senate Int 347—Stokes, Assembly Int 290—Backus, provides for care and maintenance at state expense of *patients in state tuberculosis hospitals* having for public welfare purposes no legal settlement in any town or city

Senate Int 475—Muzzicato, Assembly Int 211—Lomis, fixes penalty for violation of the *Sanitary Code* applicable outside New York City, at fine of not exceeding \$50 or imprisonment for not exceeding six months, or both.

Senate Int 588—Mahoney, Assembly Int 746—Todd, extends to January 1, 1942, time when *nurses* must be *licensed* for practice in this state, permits Education Department to admit to examination graduate nurses of other states, and permits practice pending results of examination for license

Senate Int 936—Desmond, Assembly Int.

1221—Peterson, permits court, upon trial of persons arrested for operating *motor vehicle* or motorcycle while in an intoxicated condition, to admit in evidence amount of alcohol in defendant's blood as shown by medical or chemical analysis of breath, blood, urine or saliva

Senate Int 1009—Bechtold, Assembly Int 1241—Rapp, permits the suspension or revocation of *motor vehicle licenses* and certificates of registration when holder is committed by court institution under jurisdiction of the Mental Hygiene Department

Senate Int 1010—Hampton, Assembly Int 1245—Wright, requires that nonprofit *medical indemnity and hospital service corporations* shall set aside on December 31, 1941, *special contingent surplus fund* equal to one-half of surplus funds over reserve and other liabilities and four per cent of net premium income during year, but not to exceed twenty per cent of incurred losses or amount of contingent surplus required by present law

Senate Int 1024—Hastings, Assembly Int 572—Wadsworth, extends jurisdiction of *State Social Welfare Board* to corporations formed as *clinics or institutions*, as well as hospitals and homes for convalescent persons, and authorizes Board to bring action for dissolution of any such corporation formed without its approval.

Senate Int 1025—Hastings, Assembly Int 1272—Wadsworth, strikes out provision exempting persons on *work relief projects* under T E R A. from *workmen's compensation* provisions

Senate Int 1054—Muzzicato, Assembly Int 189—Lomis, increases from ten to thirty days the time prior to offering of a *blood donation* within which time donor must have had satisfactory physical examination

Senate Int 1055—Muzzicato, Assembly Int 1123—Phelps, Assembly Int 1204—Starkey, strikes out certain exemptions for sale of *drugs* subject to uniform narcotic drug law and provides that medicinal preparations administered, dispensed or sold, for purpose of exemption, shall contain some drug, in addition to narcotic drug, to confer medicinal qualities other than those possessed by narcotic drug alone

Senate Int 1091—Condon, Assembly Int 1416—Washburn, includes in provisions for *workmen's compensation*, employees of municipal corporations and other political subdivisions

Senate Int 1103—Page, Assembly Int 1426—Brees, exempts from provisions of *license to practice medicine*, physicians or surgeons employed in *U S Veteran's Administration* while engaged in performance of duties

Senate Int 1110—Condon, Assembly Int 1419—Washburn, provides that *medical bureaus and laboratories* denied license for treatment and care of injured employees, on failure to receive approval by medical society or board, shall have the right to appeal to industrial council within sixty days after application has been filed, and authorizes removal from approved list of physicians who fail to submit full and truthful medical report to employer, and makes other changes

Senate Int 1139—Desmond, Assembly Int

1452—Lonis, prohibits operation of *slaughter-houses* outside of New York City without license by agriculture commissioner for annual license fee of \$5 00, except farmers who butcher their own domestic animals or fowls on their farms, makes it unlawful to slaughter, sell or possess unwholesome meat or to feed hogs the uncooked offal from slaughter-houses, and appropriates \$5,000

Senate Int 1140—Desmond, Assembly Int 1451—Lonis, authorizes agriculture commissioner, for prevention of *trichinosis*, to require that persons manufacturing, selling or delivering articles of food containing muscle tissue of pork customarily eaten without cooking, shall process such food as prescribed by Agriculture Department

Senate Int 1141—Desmond, Assembly Int 1455—Lonis, extends to February 15, 1942, time for report of *temporary state commission* studying problems of *trichinosis* and other diseases contracted by eating infected meat, and appropriates \$7,500

Senate Int 1195—Young, Assembly Int 1641—Milmoë, provides that violations of Medical Practice Act shall be heard by subcommittee of the *Committee on Grievances* in Education Department and report adopted by a two-thirds vote of full committee shall be transmitted to the Board of Regents for approval and final determination (Unanimous vote has been required up to present time)

Senate Int 1378—Condon, requires that education boards and school district trustees shall provide *school children with health and welfare services and facilities*, and that public welfare districts and towns shall provide children who attend private schools with similar services and facilities

Senate Int 1382—Mahoney, Assembly Int 1730—Mailler, continues for another year the *commission created to formulate a long-range health program*, and appropriates \$75,000

Senate Int 1383—Crawford, provides that Education Department, on recommendation of board of examiners for *nurses*, may issue without examination a *license* to person who has certain qualifications and meets certain conditions

Senate Int 1796—Coudert, Assembly Int 2019—Olliffe, authorizes New York City superintendent of *schools* to require that *employees* shall submit to medical examination by physician or school inspector, to determine mental or physical capacity to perform duties

Senate Int 1817—Page, provides that on recommendation of Board of Nurse Examiners, Education Department may *license* as registered professional *nurse* any person who has graduated from school of nursing in United States with course of at least two years' duration in general hospital, who meets age, character and citizenship requirements and has been engaged in practice of nursing in this state for five years prior to July 1, 1938, or for ten years prior to that date, five years of which shall have been in the state

Senate Int 1913—Hampton, provides *medical expense indemnity or hospital service corporations* may, with approval of insurance superintendent, *invest* in real property required for principal office, but not to exceed 3 1/2 per

cent of net premium income during preceding twelve months

Assembly Int 167—Quinn, permits disclosure by physicians and nurses of *professional information* when such information is subject of legislative investigation

Assembly Int 930—Mitchell, provides that person who willfully violates or refuses to comply with *lawful order or regulation* prescribed by local *board of health or health officer* is guilty of an offense, instead of a misdemeanor

## BILLS DEFEATED

Senate Int 153—Farrell, Assembly Int 15—Ferral, providing for taking *testimony of physician or nurse* who rendered services to party in an action in New York City municipal court, by commission instead of subpoena. Died in Codes Committee in Senate and Judiciary Committee in Assembly

Senate Int 154—McCaffrey, Assembly Int 140—McCarron, allowing treatment by *public hospitals of workmen's compensation* cases Died in respective Labor Committees

Senate Int 274—Muzzicato, Assembly Int 318—Catenaccio, authorizing *New York City* to acquire site for building *general hospital* Passed Senate, died in Assembly Rules Committee

Senate Int 313—Gutman, Assembly Int 371—Wagner, *compulsory health insurance* Died in Insurance Committee in Senate and Ways and Means Committee in Assembly

Senate Int 521—Coughlin, Assembly Int 620—Bannigan, requiring *domestic servants* in New York City to submit to *physical examination* test for syphilis, etc Died in respective Health Committees

Senate Int 548—Gutman, authorizing *education boards* and trustees to employ psychologists, visiting teachers and social workers trained in *psychiatric social service* Died in Education Committee

Senate Int 662—Hampton, Assembly Int 1111—W. R. Williams, requiring that *police-men* injured in performance of duties receive *hospital care* during disability Lost on third reading in Senate, Assembly bill died in Rules Committee

Senate Int 736—Coughlin, Assembly Int 513—Emma, providing that *educational institutions* shall be subject to *Workmen's Compensation Law* Died in Labor Committee in Senate and Rules Committee in Assembly

Senate Int 746—Mahoney, Assembly Int 243—Crews, requiring that city education boards and school districts maintaining *vocational schools* shall provide health service facilities for pupils attending those schools Passed Senate, died in Assembly Education Committee

Senate Int 810—Burney, Assembly Int 640—Ehrlich, Assembly Int 1044—Ehrlich, providing that reimbursement by State for *home relief* paid by welfare districts shall include *hospital care* Passed Senate, died in Assembly Relief and Welfare Committee

Senate Int 829—Burney, Assembly Int 1026—Wadsworth, declaring a state policy for defense and other purposes by providing for a logical and equitable adjustment of liability

under *Workmen's Compensation Law*, etc. Passed Assembly, died in Senate Labor Committee.

Senate Int 835—McCaffrey, Assembly Int 1057—McCarron, striking out provision giving employee or carrier in *workmen's compensation* cases right to select physician to participate in *physical examination* required by industrial commissioner or board. Died in respective Labor Committees.

Senate Int 853—Wicks, providing for the licensing and regulating of *optical dispensing*. Died in Finance Committee.

Senate Int 935—Desmond, Assembly Int 1219—Peterson, providing that applicants for *licenses* as chauffeurs and operators of *motor vehicles* shall be examined by physician every three years. Died in Motor Transportation Committee in Senate and Motor Vehicles Committee in Assembly.

Senate Int 937—Desmond, Assembly Int 1220—Peterson, providing that *motor vehicle licenses* revoked or suspended two or more times shall not be restored until owner of license submits certificate of licensed physician showing physical fitness to drive. Passed Assembly, died in Senate Motor Transportation Committee.

Senate Int 953—Condon, Assembly Int 1193—Ehrlich, providing for care and treatment of injured employees by licensed *podiatrists*. Passed Senate, died in Assembly Labor Committee.

Senate Int 1074—Esquirol, includes in provisions for *Workmen's Compensation*, employment by New York City or New York City Education Boards except members of supervising and teaching staffs. Died in the Labor Committee.

Senate Int 1078—Mahoney, providing Regents may authorize board of *nurse* examiners to issue *licenses* to persons qualified because of experience and who are unable to produce records or meet requirements, preference to be given to applicants rendering nursing service without personal gain. Died in Education Committee.

Senate Int 1097—Mahoney, providing for issuance of *limited nurses' licenses* to persons who qualify as child nurses or as nurses of tuberculosis or cancer patients. Died in the Education Committee.

Senate Int 1115—Gutman, Assembly Int 1393—Wagner, creating *consumer's bureau* in the Health Department for regulation of manufacture and sale of proprietary foods, drugs or cosmetics. Died in respective Health Committees.

Senate Int 1138—Desmond, Assembly Int 1454—Lomis, creating in *Agriculture Department* a division of *meat inspection*. Died in the Agriculture Committee in the Senate and the Ways and Means Committee in the Assembly.

Senate Int 1143—Desmond, Assembly Int 1453—Lomis, providing that garbage shall be boiled before feeding to swine. Passed Senate, died in Assembly Rules Committee.

Senate Int 1145—Hammond, Assembly Int 370—Shaw, appropriating \$30,000 for suppression and control of *pohomyelitis*. Died in Finance Committee in Senate and Ways and Means Committee in Assembly.

Senate Int 1227—Gutman, Assembly Int 1268—Stemgut, gives courts of special session jurisdiction of charges for *violation of practice of chiropody*. Passed Assembly, died in Senate Education Committee.

Senate Int 1392—Esquirol, Assembly Int. 1837—Austin, providing for issuance of a *supplemental license* to a duly licensed *physiotherapist* for the use of certain *physiotherapy* modalities. Died in the respective Education Committees.

Senate Int 1532—Corning, Assembly Int 1809—Fov, providing that *fees* for *physiotherapeutic procedures* in excess of \$25, administered by physician qualified to treat by *physiotherapy* may be allowed in *workmen's compensation* cases without approval of employer. Died in Labor Committee in Senate and Rules Committee in Assembly.

Senate Int 1589—Bewley, Assembly Int 1855—Sutor, providing that in case of *death* occurring *without medical attention* the coroner may be notified as well as local health officer to investigate and certify as to cause of death. Passed Senate, died in Assembly Rules Committee.

Senate Int 1610—Mahoney, providing for *licensing certified opticians* by Education Department, on payment of ten-dollar fee with evidence of qualification and after passing examination given by board of examiners in optometry. Died in the Education Committee.

Senate Int 1686—Coughlin, Assembly Int 1966—Bannigan, requiring *domestic servants* in New York City to submit to *physical examination* including test for pulmonary tuberculosis. Died in Health Committee in Senate and Rules Committee in Assembly.

Senate Int 1692—Halpern, Assembly Int 1956—McBain, giving person on *relief* right to *select physician* within district. Died in Relief and Welfare Committee in Senate and Rules Committee in Assembly.

Senate Int 1780—Young, Assembly Int 2046—Lomis, providing that there shall be three instead of two *classes of licenses* for practice of *nursing*. Died in Education Committee in Senate and Rules Committee in Assembly.

Senate Int 1784—Riley, Assembly Int. 2070—Peterson, providing before *defendant* is sentenced for *felony* or receives suspended sentence that investigation and report shall be made by probation officer, together with physical, mental or psychiatric examination, etc. Passed Senate, died in Assembly Rules Committee.

Senate Int 1813—Riley, providing that members of *hospital house staff* shall be subject to *workmen's compensation* provisions. Passed Senate, died in Assembly Rules Committee.

Senate Int 1980—Muzzicato, defining practice of *radiology*. Lost on floor in Senate.

Senate Int 1990—Hastings continuing commission created to study facilities for care of *deaf children*. Died in Finance Committee.

Senate Int 2003—Muzzicato, physicians' and surgeons' *lien bill*. Died in the Judiciary Committee.

Senate Int 2004—Muzzicato, providing in certain civil actions for personal injuries, court may appoint one or more *physicians* as *expert witnesses*. Died in the Judiciary Committee.

1452—Lonis, prohibits operation of *slaughter-houses* outside of New York City without license by agriculture commissioner for annual license fee of \$5 00, except farmers who butcher their own domestic animals or fowls on their farms, makes it unlawful to slaughter, sell or possess unwholesome meat or to feed hogs the uncooked offal from slaughter-houses, and appropriates \$5,000

Senate Int 1140—Desmond, Assembly Int 1451—Lonis, authorizes agriculture commissioner, for prevention of *trichinosis*, to require that persons manufacturing, selling or delivering articles of food containing muscle tissue of pork customarily eaten without cooking, shall process such food as prescribed by Agriculture Department

Senate Int 1141—Desmond, Assembly Int 1455—Lonis, extends to February 15, 1942, time for report of *temporary state commission* studying problems of *trichinosis* and other diseases contracted by eating infected meat, and appropriates \$7,500

Senate Int 1195—Young, Assembly Int 1641—Milroe, provides that violations of Medical Practice Act shall be heard by subcommittee of the *Committee on Grievances* in Education Department and report adopted by a two-thirds vote of full committee shall be transmitted to the Board of Regents for approval and final determination (Unanimous vote has been required up to present time)

Senate Int 1378—Condon, requires that education boards and school district trustees shall provide school children with *health and welfare services and facilities*, and that public welfare districts and towns shall provide children who attend private schools with similar services and facilities

Senate Int 1382—Mahoney, Assembly Int 1730—Mailier, continues for another year the *commission* created to *formulate a long-range health program*, and appropriates \$75,000

Senate Int 1383—Crawford, provides that Education Department, on recommendation of board of examiners for *nurses*, may issue without examination a *license* to person who has certain qualifications and meets certain conditions

Senate Int 1796—Coudert, Assembly Int 2019—Olliffe, authorizes New York City superintendent of *schools* to require that *employees* shall submit to medical examination by physician or school inspector, to determine mental or physical capacity to perform duties

Senate Int 1817—Page, provides that on recommendation of Board of Nurse Examiners, Education Department may *license* as registered professional *nurse* any person who has graduated from school of nursing in United States with course of at least two years' duration in general hospital, who meets age, character and citizenship requirements and has been engaged in practice of nursing in this state for five years prior to July 1, 1938, or for ten years prior to that date, five years of which shall have been in the state

Senate Int 1913—Hampton, provides *medical expense indemnity or hospital service corporations* may, with approval of insurance superintendent, *invest* in real property required for principal office, but not to exceed 3½ per

cent of net premium income during preceding twelve months

Assembly Int 167—Quinn, permits disclosure by physicians and nurses of *professional information* when such information is subject of legislative investigation

Assembly Int 930—Mitchell, provides that person who willfully violates or refuses to comply with *lawful order or regulation* prescribed by local *board of health or health officer* is guilty of an offense, instead of a misdemeanor

## BILLS DEFEATED

Senate Int 153—Farrell, Assembly Int 15—Ferril, providing for taking *testimony* of *physician or nurse* who rendered services to party in an action in New York City municipal court, by commission instead of subpoena Died in Codes Committee in Senate and Judiciary Committee in Assembly

Senate Int 154—McCaffrey, Assembly Int 140—McCarron, allowing treatment by *public hospitals of workmen's compensation* cases Died in respective Labor Committees

Senate Int 274—Muzzicato, Assembly Int 318—Catenaccio, authorizing *New York City* to acquire site for building *general hospital* Passed Senate, died in Assembly Rules Committee

Senate Int 313—Gutman, Assembly Int 371—Wagner, *compulsory health insurance* Died in Insurance Committee in Senate and Ways and Means Committee in Assembly

Senate Int 521—Coughlin, Assembly Int 620—Bannigan, requiring *domestic servants* in New York City to submit to *physical examination* test for syphilis, etc Died in respective Health Committees

Senate Int 548—Gutman, authorizing *education boards* and trustees to employ *psychologists*, visiting teachers and social workers trained in *psychiatric social service* Died in Education Committee

Senate Int 662—Hampton, Assembly Int 1111—W R Williams, requiring that *police-men* injured in performance of duties receive *hospital care* during disability Lost on third reading in Senate, Assembly bill died in Rules Committee

Senate Int 736—Coughlin, Assembly Int 513—Emma, providing that *educational institutions* shall be subject to *Workmen's Compensation Law* Died in Labor Committee in Senate and Rules Committee in Assembly

Senate Int 746—Mahoney, Assembly Int 243—Crews, requiring that city education boards and school districts maintaining *vocational schools* shall provide health service facilities for pupils attending those schools Passed Senate, died in Assembly Education Committee

Senate Int 810—Burney, Assembly Int 640—Ehrlich, Assembly Int 1044—Ehrlich, providing that reimbursement by State for *home relief* paid by welfare districts shall include *hospital care* Passed Senate, died in Assembly Relief and Welfare Committee

Senate Int 829—Burney, Assembly Int 1026—Wadsworth, declaring a state policy for defense and other purposes by providing for a logical and equitable adjustment of liability

Courts may, in cases of "drunken drivers" admit in evidence amount of alcohol in defendants' blood

Individuals committed by court to an institution of the Mental Hygiene Department, are liable to have their driver's licenses suspended or revoked

All clinics or institutions, as well as hospitals and homes for convalescent persons, are to be placed under the jurisdiction of the State Social Welfare Department

The sale of any drugs containing opium or any of its derivatives will be restricted to prescription by a physician

Trichinosis is receiving increasing attention. The commission to study this problem has an extension of another year, with an appropriation of \$7,500. The Mailer Long Range Health Commission was continued with an appropriation of \$75,000, an increase of 30,000 over last year's amount

Slaughterhouses outside New York City must be licensed by the Department of Agriculture and only wholesome meat may be sold, and hogs must be fed only cooked offal from slaughterhouses. Articles of food containing pork shall be properly processed

Our Executive Officer has filed with the Governor opposition to two bills of the Department of Education, authorizing registration as professional nurses of certain persons not possessing the educational qualifications required by law, also opposition to the Quinn bill requiring physicians and nurses to divulge confidential information

Results show that upstate legislators were more familiar with the stand of the State Medical Society on public health measures than in previous years. Evidently, the "big stick" of some of the upstate County Presidents and Secretaries has been profitably wielded

In the downstate area the senators led us to the conclusion that not one in five had been approached by any physician relative to the merits of the radiology bill. One of the senators opposed the bill in the interests of organized labor

This year it seemed wise to omit the introduction of the physicians' lien bill. That should come up in 1942, and very early

Each county society can plan systematized contacts of their legislators, especially as regards the lien bill and the radiology bill

The 1942 personnel in the Legislature probably will be the same as this year

The Committee gave particular attention to the instruction of the 1940 House that efforts be made for repeal or amendment of the State Education Law so as to prevent use of the title of "Doctor" by those who practice chiropody (podiatry) and others of the minor subdivisions of the healing arts, and also to petition the Governor, the Legislature, and the University of the State of New York to the end that the title "Doctor" be properly safeguarded. It reported to the Council the following facts

1945, in its school, the First Institute of Podiatry of Long Island University, to increase the educational requirements for the degree of Doctor of Podiatry, from two years of college work and three years at the Institute to two years of college work and four years at the Institute—so that the title of Doctor will become a standard doctorate

3 The Associate Commissioner of Education was very positive at the meeting in September of the representatives of Podiatry, himself and the Legislative Committee of the Medical Society of the State of New York, that with the title of Doctor being given to so many groups other than Doctors of Medicine, his department would not approve of any amendment to the law eliminating the title "Doctor of Podiatry" with the promise that such a change to standard requirements for a Doctorate were to be made. In other words, at present, he feels that the Doctorate in Podiatry is substandard and the change to 2 and 4 years, respectively, from 2 and 3 years would make it standard

4 That, when the podiatrists amended their law in 1936 so that after the year 1940, a course would be started requiring for admission 2 years of college work and 3 years study of podiatry, and that graduates of such a course would have the right to use the title "Doctor of Podiatry," the Society through its Committee on Legislation, with the approval of the Chairmen of the various County Committees on Legislation, carefully studied and apparently approved the proposed amendment.

The Council, with these facts in mind, took formal action at its meeting on January 9, 1941, in its capacity as the ad interim administrative body of the Society charging its Committee on Legislation to take no action in this matter

Your Committee has received increasing evidence of the recognized stability, reliability, and dependability of our Executive Officer, Dr. Lawrence, in the eyes of our legislators, especially the leaders. It should be a matter of satisfaction and congratulation

The responses from the county societies with their offered impressions of bills have been of great help, more than ever before. Most of the physicians recognize the fact that the legislator is "on the spot" and treats him with all friendliness in personal or written contacts. Very rarely there is a doctor who writes mandatorially, with little respect and in a manner to which any self-respecting man would object. "Molasses—not vinegar!"

Dr. Lawrence advises that the best method of getting a bill before the Legislature and without expense to the doctor is to present the proposition to an Assemblyman or Senator, asking him to draft it into a bill and introduce it

Again, we implore that the House of Delegates refrain from making any mandatory requests for specific legislation

The Woman's Auxiliary of the State Medical Society is cooperating intelligently and tirelessly. From reports, we conclude that law opposition to health insurance bills, to the Schwert bill on physical education, and to many other undesir-

1 The present law, effectual as of September, 1940, does not give podiatrists the right to use the title "Doctor" but only the title "Doctor of Podiatry" to graduates in 1943

2. The Podiatry Society of the State of New York has advised the Department of Education that it will be prepared by the year

Senate Int 2106—Desmond, authorizing boards of supervisors to provide fund for paying in advance bills of committee administering *mutual self-insurance* plan and expenses of medical, hospital and similar service, for *injured employees* Died in the Internal Affairs Committee

Senate Int 2107—Desmond, providing that in case of a village participating in a *mutual self-insurance plan of workmen's compensation*, its equalized valuation shall be determined from assessments of properties within the village as they appear on last preceding assessment roll of town. Died in the Labor Committee

Senate Int 2123—Esqurol, requiring every *nursing bureau* to obtain a license from mayor or licensing commissioner of city Died in the Finance Committee

Assembly Int 62—Peterson *chiropractic bill* Died in the Rules Committee

Assembly Int 352—L Bennett, providing for *inspection of hospital records* by injured person and his attorney in actions against New York City or its education boards for damages for personal injuries Died in the Rules Committee

Assembly Int 364—Austin, prohibiting the handling of food in restaurants, etc., by person with communicable or contagious disease, and requiring *physical examination of food handlers* Died in the Health Committee

Assembly Int 442—Emma, appropriating \$750,000 for construction of *cancer hospital in Ulva* Died in the Ways and Means Committee

Assembly Int 491—Giordano, payment of funeral expenses from *life insurance* of deceased Died in the Judiciary Committee

Assembly Int 505—Austin, court to modify *hospital lien* Stricken from third reading calendar

Assembly Int 527—L Bennett, practice of *chiropractic* Died in the Education Committee

Assembly Int 574—L Bennett, requiring physicians to report cases of *infantile paralysis*, etc Died in the Ways and Means Committee

Assembly Int 612—McLaughlin, creating *commission* to make survey of *dental needs* of inhabitants Died in the Rules Committee

Assembly Int 827—Gittleson, defining as hazardous for *workmen's compensation* purposes, employment in *civil service* or *municipal corporations* Died in the Labor Committee

Assembly Int 1114—Giordano, permitting sick person receiving *relief to select own physician* Died in the Relief and Welfare committee

Assembly Int 1231—G B Parsons, creating *commission* to study methods and facilities for *physical education* and recreation in schools and colleges Died in the Rules Committee

Assembly Int 1335—McLaughlin, authorizing the *inspection of roadside collages* Died in the Cities Committee

Assembly Int 1475—Caffrey, creating *commission* to study and make inventory of existing and potential *food resources*, etc Died in the Rules Committee

Assembly Int 1797—Wachtel, providing that no *person handling food*, who has com-

municable disease, shall be permitted to work in factory where food is manufactured, etc Died in the Rules Committee

Assembly Int 1893—Gittleson, establishing a *statewide plan of public medicine* Died in the Ways and Means Committee

Assembly Int 2062—Austin, requiring New York City education board to establish *child guidance bureau* Died in the Rules Committee

Assembly Int 2173—Jack, requiring New York City education board to establish *staff of physicians, dentists*, etc., for periodic examination and promotion of health of *school children* Died in the Rules Committee

Final action of the Governor on bills referred to him will appear in a later bulletin from the Legislative Bureau

We are all breathing "easier" now The Legislature began a week later than in 1940, was slow in getting started, but its tempo increased to a hectic crescendo at the finish We should offer our sympathy to the legislators and our Executive Officer Our part in our respective committees was very little

It is to the credit of our legislature that they hold our *Medical Practice Act* in such high respect, blitzkrieg upon blitzkrieg on the part of chiropractors, physiotherapists, and others were repulsed successfully, *Health insurance* and *socialized medicine* were, as usual, considered and waylaid We opposed Assembly Int 167—Quinn, permitting a legislative investigation to hear *testimony from doctors and nurses* engaged in hospital work This bill alone was passed over our opposition, but it is likely the Governor will veto it The *radiology bill* was only introduced on March 25th, by Senator Muzzicato The senator is a physician, has a personal interest, and is supposed to have introduced the bill of his own accord In fact, he reintroduced Senator Desmond's bill of last year This bill was lost in the Senate, with opposition especially strong from the labor lobbyists Only two of New York County's nine votes were in favor, only one of Kings' eight was affirmative with two recorded as absent, all three senators from the Bronx were opposed, and of Queens, one was for and one against the bill Richmond County had one vote and that one for the bill The Senator had never been contacted by a physician, other than by Senator Muzzicato who sat next to him in the Senate

We receive condemnatory letters sometimes We did in connection with the radiology bill The doctor did not even know that it had been introduced

Suppose the doctors in Greater New York were to interview their senators and assemblymen early and find out if they will favor a bill which the radiologists want to have passed If they find sufficient support, it is recommended that they introduce the bill early in the coming January—otherwise there is no hope

The amendment to the Medical Practice Act was passed It will increase the efficiency of the Grievance Committee, despite the fact that it was further amended before passage "A part of a loaf is better than none"

Voluntary health insurance corporations must hire solicitors for subscribers by salary, not by commission

I believe from my association with the work of the New York Office that, while much has been accomplished, further savings and efficiency are possible. I am convinced, moreover, that the progress which has been made is due largely to the work of the Council *Committee on Office Administration and Policies*. It would be unfortunate to interrupt this work, and my first recommendation to the House of Delegates is that this body be continued and its composition and form retained, for this includes representation from the secretarial, editorial, business, and financial elements of your organization. This committee, as a matter of efficiency and economy, should continue to be identical with the *Publication Committee*, because their interests overlap to a large degree. It might be desirable, however, to have a different trustee appointed on each committee in order to develop a wider and more intimate contact between the Board of Trustees and the Society's activities. Reports from this committee should be made to the Council, and a final report made to the House of Delegates at its annual session. I shall refer to this matter again later on and shall conclude the purely financial section of my report with a more specific analysis of the auditor's statement for the year 1940.

The income from dues (including arrears) was \$179,148. The expense of operations was \$160,165.78. This leaves apparently a surplus of \$18,982.22. Note may be taken of the expenditures. The cost of administration grossly was as follows: central office salaries (general manager and clerical force) \$32,658.51, for new furnishings \$4,511, for rent \$2,914.21, for auditing and system study \$2,100, for social security and unemployment taxes \$1,442.47, for supplies, telephone, extra stenography, postage, light, etc., \$5,676.78, for the Medical Preparedness Committee, \$1,009.58. A number of miscellaneous items make up a total of over \$51,000 for central office administration. Several of these items should not recur, e.g., outlays for new furniture, system studies, medical preparedness, but salaries constitute a continuing factor, well over \$34,000 for the general conduct of the headquarters office without those connected with publications, public relations, legislation, workmen's compensation, and the legal bureau.

In a discussion of expenditures for salaries it may be of interest to note that the total disbursements for salaries during 1940 was \$100,141.51, made up as follows: headquarters office \$34,658.61, department of publications, JOURNAL, \$16,435.50, and *Directory* \$5,298.10, public relations bureau \$9,774.30, legislative bureau \$13,030, workmen's compensation bureau \$7,385, bureau of scientific activities \$1,560, and legal department \$12,000.

Previous to 1940 the auditing procedures employed did not afford a satisfactory method of determining the actual expenditures for salaries. However, as nearly as I can state them, the total amount for 1939 was \$89,128.69 as compared with \$100,141.51 for the past year. In other words, about 55 per cent of the total income from dues in recent years is devoted to salaries, leaving 45 per cent for general activities. If a lowering of dues income results from a probable reduced membership during the war period and from remissions for those entering military service it will be necessary to exercise economies in various directions—a matter as I have already stated,

for future budget committees to take into consideration. However, I may well repeat that the expanding activities of recent years demand increasing expenditures and therefore continuing oversight is essential which, in my belief, can best be accomplished through the localized committee, whose continuation I am recommending in this report.

*B Publications*—For a period of approximately three years, your Society has published its official JOURNAL and *Medical Directory*. The costs are met by allotments from dues (91 cents per member for the JOURNAL and \$1.15 for the *Directory* in 1940) and from advertising, outside circulation, and reprints. The JOURNAL income during 1940 from these sources was \$65,561.46 and the *Directory* \$24,969.40. The total expense of production was \$80,952.78 for the JOURNAL and \$44,979.80 for the *Directory*. The net cost for the Society, therefore, was \$15,391.32 for the JOURNAL and \$20,010.40 for the *Directory*. The budgetary allotments were \$22,950 and \$17,000, respectively. Neither, therefore, was exceeded.

These figures are impressive, but the hope may be held out that, with the improved administration of this activity, with savings in printing costs, with the more adequate membership index which has been developed, with increasing revenue from advertising, we may expect that the Society's publication ventures will eventually return in full, or in great part, their costs. Comment must be made on the higher quality of the JOURNAL and upon its wider general distribution as compensation for the labor and effort expended. I want to call attention at this point to the devotion and hard work which has been given by Mr. Dwight Anderson to our publications. His constant association and cooperation with your Publication Committee has developed a better control and supervision over these activities than we have ever had previously.

*C Public Relations Bureau*—The conduct of this bureau cost the Society the sum of \$15,894.13 during 1940, thus coming within the budgetary allowance. A new phase of this work is the expanded radio program provided by a resolution of this House of Delegates. This has entailed a great deal of work and is described more fully elsewhere.

*D Workmen's Compensation Bureau*—Salaries took up about \$7,400 of a total of \$9,000 which this bureau cost the Society. It must be noted that the Medical Society of the County of New York appropriates an equal sum to the cost of conducting this bureau. Whether this function should be continued on the same participating basis or taken over in its entirety by the State Society and supported by contributions, in part at least, by those who receive its benefits, is a matter for future consideration.

*E Postgraduate Education*—Your Society's participation in this domain is limited practically to providing for postgraduate instruction and cost \$5,108.58. In view of the increasing demands made on the chairman of the committee in charge, it may become necessary to make this a remunerative post in the future. The Society cannot well afford to restrict these activities and as, in a sense, this is a public health function, further contributions from State and Federal sources may prove desirable. The burden of providing such facilities should not rest entirely upon organized medicine.

able bills, has been built up by the women God bless them!

Your Committee thanks each and every one, from the President and Secretary down to the last man in the last ditch, for help, kindly guidance, support and comfort, assistance and assurance. We appreciated some fine letters of confidence.

**SPEAKER BAUER** If there is no objection, the supplementary report from the Council on Legislation will be referred to the Reference Committee on the Report of the Council, Part VII, Dr. Cunniffe, *Chairman*, without being read.

(There was no dissent.)

**SPEAKER BAUER** Hearing none, it will be so ordered.

The Chair will now recognize Dr. Kosmak, Treasurer of the Society, to present a supplementary report. (Applause)

## 10 Supplementary Report of the Treasurer

### (Section 56)

**DR. GEORGE W. KOSMAK** Mr. Speaker and colleagues of the House, herewith is a supplementary report of your Treasurer which, as on previous occasions, endeavors to present a more complete statement of the Society's financial status during the past calendar year than is afforded by the auditor's formal report for this period. I also am including a partial review of those activities with which your Treasurer has been concerned by virtue of his position as a member of the Council and as Chairman of the Committees on Office Procedures and of Publication. My presentation, therefore, may overlap the reports of other constituted officers and bodies but, in the exercise of the above functions, I feel that I might be privileged to discuss them. I will consider in turn, therefore, your Society's financial status based on an analysis of the *auditor's report* for the year 1940, and refer to the work of the Special Committee on Office Administration and the activities of the Publication Committee, as these are concerned so prominently with financial matters. In conclusion there are ventured various suggestions and recommendations for your consideration and action.

**A. Finances in General**—In the Report of the Board of Trustees, the financial status of the Society is designated as satisfactory. This in a large sense is true. Nevertheless, it cannot be regarded so in a permanent sense in view of what may come about during the next few years, if and when this country becomes involved in the world conflict. In addition to the status of our securities, we must take into consideration primarily the effect on our income from the drainage of members' dues, for we cannot estimate definitely how many physicians from this state will be taken into military service. The allotment from New York has been stated to be as high as 2,500, of which a considerable number may be drawn from our membership. The surplus of income over expenditures to be noted in the auditor's report for 1940 may thus be eliminated during the current year, and this fact must be kept in mind by the Council Committee on Finance in the preparation of the next annual budget.

As pointed out in my previous reports, your Society has developed into a comparatively large and important business organization. A com-

parative tabulation of dues income in the last seven years may be of interest.

1934	\$131,936
1935	\$139,717
1936	\$143,090
1937	\$153,500
1938	\$157,764
1939	\$162,006
1940	\$179,148

The corresponding costs of administration were as follows:

1934	\$ 84,327 70
1935	\$131,230 20
1936	\$136,674 20
1937	\$144,472 71
1939	\$138,465 03
1940	(without <i>Director's</i> ) \$160,165 78

The much simpler method of conducting our Society's affairs which prevailed in former years has required extensive changes and expansion of procedures. This is particularly true since we have undertaken the publication, by our own administrative staff, of the *JOURNAL* and the *Director's*. The extent of the Society's business dealings must be gauged by the fact that our organization has become involved in monetary transactions amounting annually to about \$300,000. A more complete accounting and control in the central office was, therefore, essential. The necessary steps to accomplish this involved, among other things, the engagement of a different type of auditor. The new firm, J. K. Lasser & Co., was selected because of their long experience in the particular field of office management and publications. It can be stated that the change has been satisfactory although it involved the expenditure of a considerable sum (\$2,100) in order to modernize our bookkeeping system and the compilation of membership records. Of course, this will not be a recurring expense. Our books are now conducted on an accrual instead of, as formerly, on a cash basis. However, it is now possible to have by the 15th of each month a statement of the Society's operations for the previous month and a better knowledge of the immediate financial status of its varied operations, insofar as actual receipts and disbursements are concerned.

The new auditors were likewise engaged to survey the work of the central office and to offer concrete suggestions and criticisms. These were presented in a formal report by the Committee on Office Procedures last October and further communicated to the Council at its various meetings. Included among them were centralized opening of all mail and adequate control of all cash receipts, improvements in collection methods on accounts receivable for advertising in the *JOURNAL* and *Director's*, disbursing of petty cash and postage funds, a position analysis, and other matters. There still remains, among additional changes, the need to install an effective stock inventory system for the new *Director's* when published, to perfect operation and management policies with reference to conserving employees' time, avoid overlapping and overtime work.

All, or most of the foregoing, that is to say, the proper administration of the *JOURNAL*, *Director's*, and Technical Exhibits at the annual meeting, are strictly business activities. The gross income from these sources during 1940 was over \$112,000.

haps I did not choose the right term to designate this official, I might have used "bursar," or "comptroller," or some more expressive term.

Although I still believe in the efficacy of this suggested step, my successor in office may have different ideas on the subject, and I would, therefore, recommend that the *proposed bylaw amendment* be withdrawn from action by this House and the matter be referred to the incoming Council for further discussion. This is my first recommendation.

My second recommendation is that the Council Committee on Office Administration and Policies, as already constituted, be continued and the reappointment made each year by the incoming president, including two designated trustees. This committee, as will be noted in the Secretary's and in this report, has carried out certain essential improvements in the conduct of the main office. It was made up of men familiar with the business of the latter and has combined in its work the related questions dealing with publication matters. Thus far the committee has concerned itself with the development of better accounting methods, improved filing systems for members' records, job analysis of the clerical force, with salary adjustments and other changes in office management. Ultimately this will be reflected in efficiencies and economies which can be developed in time to an even greater degree. Situations that have resulted from a rapid expansion of the Society's activities will require time for their adjustment, but sufficient progress has been made to warrant a continuance of the policy inaugurated by the appointment of this particular committee.

I feel, moreover, that the powers of this Committee on Office Procedures should be extended to include certain functions that can be disposed of effectually by a small group in intimate contact with situations that require immediate adjustment. This would include, among other matters, questions relating to salaries, to retirements, to discharge, to engagements of members of the office staff, to various publication questions relating to the *JOURNAL* and *Directory*. I believe that this course would be very helpful to both the General and Business managers and would facilitate quick action where this is demanded.

As the Committees of Office Procedures and Publication have so much in common, I would suggest that they be made up, as last year, of the same personnel, with representation of a separate member of the Board of Trustees on each. This would insure an intimate connection between the Board and these two important committees. The latter suggestion supplements my recommendation already made above.

A third recommendation suggests for your consideration the creation of a fund to be designated as the "*Library Fund*," which shall provide for the maintenance and upkeep of a reference and working library in the headquarters office. The activities of the Bureau of Public Relations, in particular, have necessitated the acquisition and purchase of various books and periodicals which essentially are the property of your Society. A budgetary allowance of \$250 was provided last year for this purpose and was slightly exceeded. In addition "exchanges" with other medical journals should likewise be deposited as well as those books which are not suitable for review through the medium of the Kings County Medical So-

ciety. Periodicals in particular should be available for comment by the responsible editor of the *JOURNAL*. All of these must be properly stored and catalogued as necessary. As a practical measure, the Trustees may be requested to designate a certain segment of our capital funds for this purpose, the income from which could be used as indicated. The budgetary allotment made to the Bureau of Public Relations for this purpose could then be eliminated and all purchases made by proper requisition through the medium of the Library Fund. The appointment of a Council *Library Committee* and a responsible librarian from the office staff may need to be considered to carry out this plan, which I submit for your consideration.

I have one final recommendation to propose for your consideration. Through my association with various welfare organizations, particularly the Physicians' Home, I have become convinced of the desirability of having organized medicine provide through its constituent State Societies, some means of *relief for physicians* incapacitated by age, infirmities, and actual poverty. There do not appear to be many such unfortunates and large funds for this purpose are unnecessary. The Physicians' Home of New York has developed certain affiliations with our State Society, its appeal for contributions voluntarily added to the bills for regular dues has met with a very satisfactory response. It is of interest to record that this appeal resulted in the collection to date of \$2,802, showing that the members of the State Society have acknowledged in a most satisfactory manner their appreciation of this activity.

I would venture the suggestion, therefore, that our State Society assume this function and that a certain small allotment of dues be made for this purpose. It would not be an unusual procedure. The State Societies of Pennsylvania, Illinois, and some others, I believe, have developed similar benevolent functions, assisted by their Women's Auxiliaries, and I would recommend, therefore, that a special committee of three be appointed from among the membership of the incoming Council to study and report on the subject at one of its regular meetings.

In my official position as the custodian of the funds of your Society, I should perhaps have limited this supplementary report to a discussion of the dollars and cents in my charge. However, in recent years, I have come into more intimate contact with related activities in which there are important financial implications. I have endeavored to discuss some of them in this report and trust that I may be pardoned for these excursions into allied fields. It is a pleasure to record that, on the whole, your Society is financially in a fairly sound condition insofar as expenditures are kept within the bounds of our present income. It may be said that our spending policy has been liberal, but it has contributed unquestionably to the growth and importance of our organization. Whether such liberal policies can be continued in the face of the probable inroads on our dues-paying membership by the military situation and other factors are matters to be fully considered by the incoming administration. The apparent balance last year of \$19,000 may easily be wiped out and economies in the conduct of our activities may be in order.

In closing this report, with which, as it is my

*F Legal Bureau*—The costs of this bureau during 1940 amounted to \$12,321 02. Although an item of considerable expense, it is an essential phase of our activities.

*G Pensions*—Miss Baldwin, office manager emerita, received \$3,000 during the current year, as in previous years since her retirement, by resolution of the Council. Miss Loughlin, a former bookkeeper invalided by illness, has likewise received a total of \$522 95. Your Committee on Office Procedures has made inquiries as to the possibility of developing a permanent *pension system*. It was estimated by one company that the total annual premium to provide a \$65 per month annuity would amount to \$5,793 77. In another company the premium asked was \$6,253. In 1940, Government taxes for social security and unemployment insurance amounted to \$2,563 37. This figure will vary each year. Employees contribute an equal sum by deduction from payrolls. Whether our employees would be agreeable to subscribing to a second insurance scheme is doubtful, and we are not, in my belief, in a position to meet the additional cost of the entire premium or the difficulties associated with administration. The Committee on Office Procedures does not recommend this measure after careful study of its implications.

*H Investment Account*—Your Society had on January 1, 1941, surplus funds invested in stocks, bonds, and savings banks, of a total value of over \$265,872 38. The details of these segregated funds are given in the auditor's report.

The conduct of the investment fund resides in the hands of your Board of Trustees, which has presented its own report. The total income from this source during 1940 was \$11,955 17, all of which was returned to the fund. (Idle funds in the general checking account were placed in savings banks until needed. During the year they totaled about \$24,000, yielding a return of \$389 38 in interest, which would have been wasted had these monies not been set aside temporarily.)

As already stated, unavoidable depreciation in securities has occurred again during the past year, but no further defaults have taken place in either principal or interest. Dividends have been returned on all stocks acquired since a resolution of this House gave permission to the Trustees to invest 50 per cent of the Society's funds in equities. Our financial advisers (the Chase National Bank) have counseled against the purchase of further securities during the current year, with a few exceptions, and suggested a larger cash reserve to be kept in savings banks. The latter totaled about \$39,500 on January 1, 1941. This advice is in accord with safety of conserving principal rather than securing larger interest return.

I have already referred to the considerable depreciation in market values of the securities in our investment fund. This amounted in 1940 to \$26,314 66 in bonds and \$15,098 91 in stocks, or a total of \$41,413 57, in relation to the original cost, which figure is about \$5,500 in excess of the year 1939. I will continue to believe, as I have stated on previous occasions, although my belief is not confirmed possibly by others, that we should possess reserves of at least \$400,000. The only addition during the past few years to our previously accumulated reserve is the income from securities, amounting to about \$11,000, or one-quarter of the total depreciation. The excess

of operating income over operating expenses in 1940 was approximately \$19,000, which balance is none too large to serve as a working capital. It is not practical to place it in the investment account. It is unlikely that a more favorable balance will result this year if our dues income is diminished by the force of circumstances.

The comparative values of our security holdings plus (in recent years) cash reserves in savings banks, is as follows:

1934	\$177,887 40
1935	\$186,501 88
1936	\$211,549 45
1937	\$224,148 53
1938	\$236,045 07
1939	\$229,971 00
1940	\$265,872 38

It will be noted that there is shown apparently a steady increase, but account must be taken of the fact that this is due mostly to a return of the income from interest to the principal and also to the recouping fund of approximately \$13,000 taken from current income in 1938-1939 to compensate for losses in defaulted bonds. Attention must be called to an item of \$10,000 which was paid out of capital in 1937 for the purpose of establishing the JOURNAL. This sum has not as yet been returned and is a charge against the JOURNAL when sufficient funds are available for its repayment.

I regret this somewhat pessimistic note in reference to our reserves, and I feel that they should show a more healthy growth to meet possible emergencies.

*General Comments and Recommendations*—Having been honored by four successive terms in this office, your Treasurer should be permitted, at the close of his service, to present a few comments based on his experiences and observations during this period. As an elected official, charged in the Constitution and Bylaws with definite duties and responsibilities, a treasurer is apt, in time, to degenerate, unless he becomes over-conscious, into a rubber stamp, with his principal duty relegated to the signing of checks. He is an officer and not an employee. Aside from attendance at Council and Trustees' meetings, he occupies an anomalous position unless, as in this instance, he is constituted a member of special bodies such as the Council designated Committees on Office Administration and Policies, and on Publication. After he has acquainted himself with the inside workings of the administrative office, he begins to wonder how much real value he is in his honorary, and perhaps it might be called, onerous job. And when a mere practitioner of medicine is thrust into a large business organization such as your Society has grown to be, he feels very inadequate in fulfilling what should be a position of great trust. He feels, as a matter of fact, if he is to function adequately, that he should be very close to the spending mechanism. Finance committees and trustees are all very well in their way, they are supposed to control the purse strings, but in reality they have no direct and constant oversight on what comes in and what goes out. That is why in a previous report to this House of Delegates I suggested the appointment of a second assistant treasurer, who would be a full-time employee, and act as chief bookkeeper among possible other duties, and who would be an integral part of the office staff. Per-

# 14 Licensure—Standards for Recognition of Foreign Medical Schools

(Section 75)

DR. FLOYD S. WISLAW, *Monroe* This resolution is presented by the Legislative Committee of the State Society. It has to do with the registration of foreign physicians

"WHEREAS, any historical review of the development of medical licensure in the State of New York brings into prominent relief the important role that the Medical Society has assumed in each step of that development, the Society having initiated movements from time to time to raise the requirements for licensure with the sole objective in view to provide for the people of the State and the very best quality of medical care available, and

"WHEREAS, the existing requirements for medical licensure if properly enforced within the intent of the law will provide ample protection to the people from the ministrations of incompetent practitioners so far as any law can afford that protection, and

"WHEREAS, a student from the United States or Canada is required to present evidence that he has completed not less than four satisfactory courses of at least eight months each in a medical school in this country or Canada registered as maintaining at the time a standard satisfactory to the department or has received the degree of bachelor or doctor of medicine from some medical school in this country or Canada, registered as maintaining at the time a standard satisfactory to the department, and

"WHEREAS, a determination of the reputation and good standing of medical schools in the United States and Canada is on a sound basis by reason of periodic inspections of such schools by the Department of Education of New York State, the Council on Medical Education and Hospitals of the American Medical Association, and the requirements for membership in the Association of American Medical Colleges but the Department has available no comparable evidence with respect to medical schools located elsewhere because of the fact that no agency exists in this country which inspects or classifies such foreign schools, and

"WHEREAS, despite this lack of authentic information as to the quality of instruction given in foreign schools, graduates from such schools are in increasing numbers receiving licenses to practice medicine in New York State, and

"WHEREAS, according to the statistics furnished by the Bureau of Immigration of the United States, the influx of graduates of foreign medical schools into the United States has increased from 329 in the fiscal year ending June 30, 1931, to a total of 1,384 during the fiscal year ending June 30, 1939, making a total of 4,549 for the same period, a large majority of whom have been licensed in this and other states, and

"WHEREAS, the ethical and professional fitness of a candidate for medical licensure cannot be appraised solely on the strength of an examination but must be gaged also by the quality of instruction that the applicant

has received during his preprofessional and professional schooling, and

"WHEREAS, the foregoing situation presents a continuing menace to the health and welfare of the people of New York State and thus constitutes a problem causing great concern to the medical profession of the State, be it therefore

"Resolved by this House of Delegates

"(1) That recognition for medical licensure in New York State, whether after examination or otherwise and irrespective of the question of citizenship, of graduates of foreign medical schools be strictly in accordance with the method of recognition that is applied with respect to the graduates of medical schools located in the United States and Canada. Any other method of recognition would constitute the grossest type of discrimination in favor of foreign graduates,

"(2) That in the future recognition be accorded graduates of a foreign medical school who apply for license to practice medicine in the State of New York, only when there is in the possession of the Department evidence of the quality of instruction imparted by the school of graduation. This must be of equal quality with the evidence required of approved domestic schools. The identical standard should be applied in approving all medical schools, domestic or foreign."

SPEAKER BACER This resolution will be referred to the Reference Committee on New Business B, of which Dr DiNatale is the chairman

# 15 Licensure—Full Citizenship Requirement (Section 76)

DR. JOHN T. DONOVAN, *Erie* This is from the Medical Society of the County of Erie

"WHEREAS, it has been the custom of the Education Department of the State of New York to grant medical licenses to foreign physicians, and

"WHEREAS, this practice has not been to the best interests to the general public and also to the young people of this country who have studied in our medical schools, therefore be it

"Resolved, that the Medical Society of the County of Erie go on record as being in favor of requiring full citizenship as a prerequisite for the obtaining of a medical license to practice in the State of New York."

SPEAKER BAUER This resolution will be referred to the Reference Committee on New Business B, of which Dr DiNatale is the chairman.

# 16 Medical Preparedness—Deferment of Medical Students (Section 63)

DR. JOHN T. DONOVAN, *Erie* A second resolution submitted by the Medical Society of the County of Erie

"WHEREAS, medical men are necessary for the proper functioning of the Army and for the care of civilian population, and especially so during an emergency, and

"WHEREAS, the drafting of medical students would interfere with the normal training and graduation in many of them would not return

"swan song," I may have taxed your patience, I want to express my personal appreciation of the work done by your various administrative officers and the clerical staff. I may have annoyed them and at times disagreed with them, but I am pleased to acknowledge their spirit of cooperation and helpful assistance.

In an organization as large as ours, it is essential that a spirit of cooperation among its varied activities be maintained, that duties and responsibilities be clearly defined, so that smooth-working efficiency and economy be guaranteed to the membership of the Society in return for the expenditure involved. In conclusion, I want to express my appreciation of the helpful assistance of my associate, Dr. Kirby Dwight, and of Dr. Peter Irving and those members of the administrative staff with whom my duties have brought me into intimate and personal contact.

#### *Summary of Recommendations —*

1. Withdrawal of proposed amendment dealing with appointment of second assistant treasurer. Refer matter to incoming Council for study and report.
2. Continuation of Council Committees on Office Procedures and Publication, with indicated changes in personnel and authority.
3. Creation of Library Fund and provisions for maintenance of library in central office.
4. Appointment of Council Committee to study and report on a State Society Benevolence Fund.

**SPEAKER BAUER.** The Supplementary Report of the Treasurer will be referred to the Reference Committee on Report of the Council, Part XII, Dr. William Klein, *Chairman*.

#### 11 Designation of Reference Committee Meeting Rooms

**SPEAKER BAUER.** The reference committee meeting rooms are located on the third floor. As you step off of the elevator, you will see a large sign there showing the rooms to which the various committees are assigned. The Committee on Report of the President is assigned to Room 303, Council, Parts I and II, Room 302, Council, Parts III and IV, Room 301, Council, Parts V and VI, Room 310, Council, Parts VII and VIII, and Legal Counsel, Room 334, Council, Parts IX and X, Room 335, Council, Parts XI and XII, Treasurer and Trustees, Room 337, Secretary and New Business A, Room 338, New Business B and C, Room 340. Rooms 343 and 350 have the stenographers in them, and you can go to those rooms and have your reports typed. All reports and resolutions must be submitted with four copies, that is, the original and three carbon copies. When the House recesses, you can go to the third floor for your committee meetings, and I am going to ask all those who are interested in any phases of the reports or in any resolutions to present themselves before those committees so that you can give your ideas to them.

I am also going to ask all officers and members of the Council to hold themselves in readiness to appear before any reference committee, if the committee so desires.

#### 12 Introduction of Delegates from Other State Medical Societies

**SPEAKER BAUER.** Are there any delegates from the states of Connecticut, New Jersey, or Vermont present?

(There was no response.)

**SECRETARY IRVING.** Apparently they have not yet arrived.

**SPEAKER BAUER.** If anyone at any time discovers that a delegate from another State Society has shown up, I wish he would let the Chair know, so they may be properly introduced.

At this time the ordinary course of business would be the consideration of amendments to the Constitution and Bylaws which were introduced last year. However, there are several of those amendments, and if we consider them now there will be no opportunity for the introduction of resolutions before adjournment, and the New Business Reference Committees would have nothing to do during the recess. Therefore, if there is no objection on the part of the House, the Chair will postpone consideration of the amendments to the Constitution and Bylaws until the afternoon session, when it will be the first order of business. Is there any objection to such procedure?

**CHORUS.** No!

**SPEAKER BAUER.** Since I hear none, it will be so postponed, and taken up as the first order of business at this afternoon's session. When we recess, we will recess until 3:00 P. M.

At this time the Chair will receive resolutions. I am going to ask the gentlemen when you arise to give your name and county so that the reporter can get them into the record, and when you present your resolution please come forward so that you are facing the House, and so that we may all hear it.

#### 13 Medical Practice Act—Definition of Word "Antiseptic" (Section 41)

**DR. CHAS. GORDON HEYD, New York.** It was to be anticipated, gentlemen, that when the Medical Practice Act, Paragraph 2, Section 1,262, was enacted, that gave certain grants of privileges to the osteopaths, some complications would arise. The term "antiseptic" was used in that amendment to the Medical Practice Act, and the osteopaths now feel that the use of the word "antiseptic" therein allowed them to use drugs for syphilis and gonorrhea, etc. Therefore, the Board of Regents and Secretary Hammond, have been confused at the lack of a proper definition of "antiseptic", hence this resolution is submitted.

"WHEREAS, the word 'antiseptic' has never been clearly defined as used in the Medical Practice Act, Paragraph 2, Section 1,262, be it

"Resolved, that for the purpose of administration the term 'antiseptic' as used in this law shall be construed to refer to a substance employed for topical applications only or to serve as a solution for the sterilization of instruments, the effect in both instances being to prevent or inhibit the growth of micro-organisms."

**SPEAKER BAUER.** This resolution will be referred to the Reference Committee on New Business A, of which Dr. Simpson is chairman.

medicine in the state with the implied or expressed promise that such fees were to be collected for a period of five years by which time the problem of the control of unlawful practice of medicine was expected to be solved, and

"WHEREAS, this annual fee has been collected annually since the effective date of the new law with no indication that it is not considered a permanent tax, and

"WHEREAS, there are no provisions or, at best, inadequate provisions for the care of indigent physicians in New York State, be it

"Resolved, first, that the Nassau County Medical Society requests an accounting of the moneys collected for annual re-registration since the effective date of the law with a statement as to how such moneys were expended, and be it further

"Resolved, second, that a sum of money be set aside from this fund to be made available to the indigent physicians of the state, and be it further

"Resolved, that a portion of the annual re-registration be henceforth allocated for such purposes, and be it further

"Resolved, that the delegates of the Nassau County Medical Society be instructed to present these resolutions to the annual meeting of the House of Delegates to the Medical Society of the State of New York to be held at Buffalo starting April 28, 1941, with the request that the Medical Society of the State of New York sponsor and seek the introduction and passage of such legislation as might be necessary to make effective the purposes of these resolutions"

SPEAKER BAUER Inasmuch as a resolution on the subject of this re-registration fee was introduced last year and referred to the Council, and the Council has reported in Part XI of the Council Report, it is believed this resolution is sufficiently related so that it should be referred to this same reference committee. Therefore, this will be referred to the Reference Committee on Report of the Council, Part XI, of which Dr Bull is chairman

## 21 Medical Preparedness—Funds for County Society Committees

### (Section 74)

DR. THOMAS A. MCGOLDRICK, *Kings* This is from the Medical Society of the County of Kings

"WHEREAS, The American Medical Association and the Medical Society of the State of New York have agreed to assist the Federal Government in National Defense, and

"WHEREAS, this has necessitated the selection of over 2,000 physicians in New York State to work on Local Draft Boards and Medical Advisory Boards, and

"WHEREAS, selection and recommendation of physicians to serve on these Boards has necessitated innumerable telephone conferences and correspondence, and

"WHEREAS, requests are constantly being made of the County Medical Societies by both the State Medical Society and the Army as to the capability of physicians to do certain types of work, and

"WHEREAS, we are now being requested to review the records of and to certify the 4,600 doctors of Brooklyn as to their availability for military or naval service, or as to their need for the care of the civilian population, and

"WHEREAS, this is an added burden on already overhurdled clerical and stenographic staffs in the County Medical Societies, therefore be it

"Resolved, that the New York State Medical Society allot sufficient funds to the County Societies to provide additional necessary clerical and stenographic help and office equipment to assist in carrying on the work of the committees on medical preparedness"

SPEAKER BAUER This resolution will be referred to the Reference Committee on New Business B, of which Dr DiNatale is chairman

## 22 Medical Relief—Direct Payment of Medical Fees to the Aged, the Blind, and Dependent Children

### (Section 73)

DR. THOMAS B WOOD, *Kings* This is a resolution submitted by Kings County

"WHEREAS, under existing laws, it is the duty of the State to provide medical care for those persons who are unable to provide this care for themselves, and

"WHEREAS, the cost of medical care is variable and, at the present time, cannot be estimated in advance, and

"WHEREAS, under the Social Security Act payments for assistance in categories for which grants are given by the Federal Government, such as the aged, the blind and dependent children, can be made only to the recipient of this assistance, and

"WHEREAS, under this ruling physicians treating persons receiving old-age assistance, aid to the blind or aid to dependent children can no longer be paid directly by the local welfare organizations, and

"WHEREAS, physicians, nurses, appliance dealers, etc, have no accurate knowledge of when persons in these categories receive checks to pay for medical services which physicians and others have given them, and

"WHEREAS, this tends to cause additional hardship to physicians and others by either requiring them to go to the patient's home, possibly several times, to collect their fee, or to treat these patients without just recompense, and

"WHEREAS, we realize that the Subcommittee on Medical Relief of the State Medical Society, the New York State Department of Social Welfare and the New York City Department of Welfare, feel that persons rendering medical care of New York State should be paid directly but that the State could not sacrifice approximately \$900,000 in federal grants for medical care which they must sacrifice under this provision of the Social Security Act if the monies were paid to other than the recipients-of-aid in these categories, therefore be it

"Resolved that the Medical Society of the State of New York, through its delegates to the American Medical Association, request that the American Medical Association have

for the completion of the study of medicine when the course has been interrupted for one or more years, therefore be it

"Resolved, that the Medical Society of the County of Erie go on record against the drafting of medical students and also instruct its delegates to implore the Medical Society of the State of New York to do everything in its power to allow the deferment by Selective Service Boards of medical students thereby permitting them to complete their medical education, and be it further

"Resolved, that the Medical Society of the State of New York send letters to various draft and appeal boards appraising them of the gravity of the situation"

SPEAKER BAUER This resolution will be referred to the Reference Committee on New Business C, of which Dr Masterson is the chairman

#### 17 Establishment of Section on Thoracic Diseases

(Section 44)

DR. JOHN T. DONOVAN, *Erie* This is a third resolution which I would like to submit

"WHEREAS, during the past decade great advance has been made in the diagnosis and treatment of thoracic diseases, and

"WHEREAS, the profession at large is being deprived of the knowledge of this scientific achievement, and

"WHEREAS, the New York State Chapter of the American College of Chest Physicians at its annual session held in January 17, 1941, unanimously passed a resolution to petition the New York State Medical Society for the establishment of a session on thoracic disease at its annual meetings, therefore be it

"Resolved, that the House of Delegates establish a section on thoracic diseases, thus affording to the members of the State Medical Society a greater opportunity for scientific and clinical knowledge regarding this very important branch of medicine"

SPEAKER BAUER This resolution will be referred to the Reference Committee on New Business A, of which Dr Simpson is the chairman

#### 18 Membership—Remission of Dues for Members in Active Military Service

(Section 56)

DR. JOHN T. DONOVAN, *Erie* This is a resolution of the Medical Society of the County of Erie

"WHEREAS, the induction of physicians into military service removes them from their practice, and

"WHEREAS, this results in a great sacrifice to the said physician both personally and financially, therefore be it

"Resolved, that the Medical Society of the County of Erie go on record as favoring the waiving of both county and state dues of said physician while in active military service, this resolution having been discussed and adopted at the stated meeting of the Medical Society of the County of Erie held February 17th, 1941, be it further

"Resolved, that the Medical Society of the

County of Erie beg the Medical Society of the State of New York to take such action"

SPEAKER BAUER Inasmuch as there is a resolution much to the same effect in the Report of the Council, Part XII, this resolution will be referred to that committee of reference instead of to a New Business Reference Committee This is referred to the Reference Committee on the Report of the Council, Part XII, dealing with the Reports of the Treasurer and Trustees, of which Dr Klein is chairman

#### 19 Medical Preparedness—Women Physicians for the Medical Reserve Corps of the United States Army and Navy

(Section 69)

DR. EMILY D. BARRINGER, *New York* This resolution is presented by the Medical Society of the County of New York

"WHEREAS, the United States of America is at present engaged in a vast preparedness program which includes a listing of members of the Medical Reserve Corps available for active service, and

"WHEREAS, there are approximately 8,000 women physicians and surgeons in the United States—women physicians and surgeons of America demonstrated their fitness for war-time service during the First World War when they financed units and staffed hospitals with well-trained officers, in France and Serbia, and

"WHEREAS, the United States Government has to date taken no cognizance of these women physicians in time of national emergency, and

"WHEREAS, the Government has already granted women nurses Army rating with proper rank, pay, and war-risk insurance, therefore be it

"Resolved, that the Medical Society of the State of New York recommend that the women physicians and surgeons of America be made eligible for the Medical Reserve Corps of the United States Army and Navy, and he granted full privileges thereof, and be it further

"Resolved, that the Medical Society of the State of New York instruct their delegates to the House of Delegates of the American Medical Association, that this request be laid before the House of Delegates of the American Medical Association for consideration."

(Applause)

SPEAKER BAUER This resolution will be referred to the Reference Committee on New Business B, of which Dr DiNatale is chairman

#### 20 Medical Practice Act—Annual Re-registration Fee

(Section 48)

DR. LOUIS A. VAN KLEECK, *Nassau* This is a resolution submitted by the Nassau County Medical Society

"WHEREAS, the Medical Practice Act of 1930 provides for the payment of every practicing physician of an annual re-registration fee of \$2.00, and

"WHEREAS, the medical profession was told at the time this law was proposed that the purpose of the fee is to provide the educational authorities of the state with funds with which to control the unlawful practice of

referred to the Reference Committee on New Business B, of which Dr DiNatale is chairman

## 27 School Health Program (Section 48)

DR. ROMEO ROBERTO, *Westchester* This is a resolution from the Medical Society of the County of Westchester, on the subject of School Health Service

"WHEREAS, the problem of school health service involves many aspects, requiring the consideration of school physicians, public health experts and experts in health education, in addition to physicians engaged in private practice, and

"WHEREAS, the tendencies and trends in the development of school health service may well determine the pattern of future medical practice, since the children of today will be the adult citizens of tomorrow, be it

"Resolved, that the House of Delegates request the Council to provide for the formation of a special committee or commission, representative of school physicians, private physicians and experts in health education, and charge this commission with the duty of studying further the school health program of this state and formulating, as promptly as possible, a practical program of action in answer to the following question

"What changes are needed in law and in administrative practice to place the school health service upon a sound economic and professional basis, to equip the school physician for leadership in health education, to correlate the school health program with the educational program as a whole, and to correlate the school health service with the official health agencies and the medical profession in the community?"

SPEAKER BAUER This resolution will be referred to the Committee on New Business A, the reference committee of which Dr Simpson is chairman.

## 28 Leaves of Absence for Officers in Military Service (Sections 88, 79)

DR. THEODORE WEST, *First District Branch* I wish to introduce this resolution

"WHEREAS, many officers of this Society and of its District Branches are also officers in the Medical Reserve of the armed forces of the United States, and

"WHEREAS, such officers, when called to active duty, may, by reason of distance or the press of military work, be unable to function properly as officers of this Society or its District Branches, and

"WHEREAS, there is no provision in the present Bylaws of this Society to cover such an emergency, therefore be it

"Resolved that any officer of the Medical Society of the State of New York or its District Branches who is called into active service with the armed forces of the United States may, upon application to the Council, be granted leave of absence during his period of active service, and be it further

"Resolved, that during such absence his duties shall be delegated as the Council may

direct except where such delegation is already provided in the Bylaws"

SPEAKER BAUER That involves an amendment to the Bylaws, and cannot therefore be referred to a reference committee, but will have to be held over until next year

## 29 Invitation to American Medical Association to Hold Its 1944 Annual Meeting in New York City (Section 70)

DR. A. M. HELLMAN, *New York* This concerns the 1944 meeting of the American Medical Association

"WHEREAS, the 1940 Annual Meeting of the American Medical Association was a great success in New York City, therefore be it

"Resolved, that the Medical Society of the State of New York extend an invitation to the American Medical Association to hold its 1944 Annual Meeting in New York City"

SPEAKER BAUER That resolution will be referred to the Reference Committee on New Business B, of which Dr DiNatale is chairman

## 30 Advertising in Newspapers—by Physicians (Section 61)

DR. SAMUEL M. KAUFMAN, *New York* This resolution is presented from the Medical Society of the County of New York

"WHEREAS, Governor Lehman recently signed the Milnoe Bill which limits drastically commercial displays and flagrant advertising by licensed podiatrists in the State of New York, and

"WHEREAS, the dental profession previously succeeded in bringing about legislative enactment which reduced advertising abuses in the dental profession, therefore be it

"Resolved, that the House of Delegates of the Medical Society of the State of New York go on record as disapproving all advertising in newspapers by practicing licensed physicians of the State of New York, individually or in groups, in the form of announcing their office address, office hours, kind of practice or particular cure to the public, and further be it

"Resolved, that the House of Delegates instruct the Committee on Legislation of the New York Medical Society to take any action necessary to amend the present law to this effect"

SPEAKER BAUER That is referred to the Reference Committee on New Business C, of which Dr Masterson is the chairman

## 31 Medical Preparedness—Deferment of Medical Students (Section 62)

DR. M. E. MARSLAND, *Westchester* This comes from the Medical Society of the County of Westchester

"WHEREAS, the experience of belligerent nations in the World War and in the present conflict amply demonstrates the necessity for insuring a continuing supply of well-trained medical graduates, and

"WHEREAS, the United States Army in 1917-1918 permitted medical students on active service to be transferred to the Reserve for the purpose of completing their medical

legislation initiated to provide a change in the Social Security Act so that persons rendering medical care to recipients-of-aid from any government agency may be paid directly by that agency."

**SPEAKER BAUER** This resolution will be submitted or referred to the Reference Committee on New Business B, of which Dr DiNatale is chairman

### 23 Medical Relief—Direct Payment of Medical Fees to the Aged, the Blind, and Dependent Children

(Section 73)

**DR HOWARD FOX, New York** This resolution from the New York County Society is very much like the last one, and perhaps goes to show that other men in different parts of the state feel similarly

"WHEREAS, after April 1, 1941, checks from the Department of Welfare of the State of New York (Q V Form M med 383 b) for the Medical Care of those patients entitled to Old Age Assistance and Blind Assistance will be issued directly to the recipients of the care and not to the doctors rendering it, and

"WHEREAS, this forces the physician to collect these fees from indigent people who may be unreliable, therefore be it

"Resolved, that the Medical Society of the State of New York go on record as being opposed to the proposed change in method of payment, and that the Society request the Department of Welfare to continue its former method of paying these physicians directly"

**SPEAKER BAUER** This resolution will be referred to the same committee as the previous one, Reference Committee on New Business B, of which Dr DiNatale is chairman

### 24 Health and Accident Insurance for Interns

(Section 42)

**DR ABRAHAM KLEIN, Kings** This is the resolution I wish to introduce

"WHEREAS, hospital interns spend some of the best years of their lives in caring for the sick at very little or no compensation, and

"WHEREAS, the risk of infection or injury to hospital interns is very great, and

"WHEREAS, many hospital interns in the past have become disabled for life through accident or illness, therefore be it

"Resolved, that the Medical Society of the State of New York recommend to the New York State Legislature that a bill be introduced making it obligatory for hospitals in New York State to provide health and accident insurance for interns serving in their hospitals"

**SPEAKER BAUER** That resolution will be referred to the Reference Committee on New Business A, of which Dr Simpson is chairman

### 25 Medical Preparedness—Foreign Service of American Physicians

(Section 60)

**DR LAURANCE D REDWAY, Westchester** I wish to introduce this resolution

"WHEREAS, the President of the United States, on April 17, 1941, has, as President of the American Red Cross, endorsed the appeal of the British Red Cross for one thousand young American physicians, and

"WHEREAS, the American Medical Association, in an editorial in the *Journal of the A M A* has 'assured Britain of every possible assistance,' and has supplied the Red Cross with lists of eligible young doctors, thereby endorsing the principle that American physicians be encouraged to volunteer for foreign service, and

"WHEREAS, of the 5,000 annual graduates of American medical schools only 3,000, or 60 per cent, are physically acceptable for military service and available to meet the demands of an expanding military establishment, thereby necessitating substantial requisitions from the ranks of those now in private practice in addition to depriving the civil population of 50 per cent of the new graduates, and

"WHEREAS, the maintenance of those standards of military and civil health, made possible by the thorough education and training of the American Physician and now demanded by the people of the United States, is vital to the defense of the nation and the welfare of its population, therefore be it

"Resolved, that the Medical Society of the State of New York instruct its delegates to the A M A to propose, by resolution or otherwise, that the American Medical Association immediately state its policy with respect to further depletions of the reservoir of available young American physicians in the event of further requisitions of volunteer medical personnel emanating from a foreign source"

**SPEAKER BAUER** That resolution will be referred to the Reference Committee on New Business C, of which Dr Masterson is chairman

### 26 Corporate Practice of Medicine

(Section 71)

**DR. ANDREW A EGGSTON, Westchester** The resolution I wish to introduce concerns the Corporate Practice of Medicine, and is as follows

"WHEREAS, the practice of medicine or of any other profession by a corporation is advisedly prohibited by most of the states of the union, and

"WHEREAS, New York State now authorizes the formation of nonprofit corporations in the field of voluntary health and medical expense insurance, a development which may ultimately be extended to the authorization of the virtual practice of medicine by commercial as well as nonprofit corporations, and

"WHEREAS, proponents of radical innovations in the practice of medicine are known to be seeking means of breaking down or of circumventing present legal obstacles to the outright or disguised practice of medicine by corporations, therefore be it

"Resolved, that the House of Delegates request the Council to designate a committee to study the present laws and precedents in New York State relating to the corporate practice of medicine, this committee to be charged with the continuing duty of studying and periodically reporting to the House of Delegates and to the Society its findings and recommendations, with a view to preventing the destruction or circumvention of legal safeguards against corporate practice in New York State"

**SPEAKER BAUER** That resolution will be

they would go to a dinner tonight if such were held. Are there any who were not asked that question, and who would he interested in going?

About 25 so indicated

**SPEAKER BAUER** Apparently there are over 100 who would be willing to go. We will make a definite announcement about that dinner at the opening of the afternoon session as to the time and place. I think it will be in the Georgian Room, which I believe is on the mezzanine floor, but we will make a definite announcement as to that at the afternoon session, and we will try to make it as reasonable as possible.

The Secretary informs me that some of the delegates have not turned in their credentials. Will you please do so, when you leave this session at the registration desk?

When we recess, we will recess until 3 00 P.M. in this room.

Are there any other announcements to be made?

(There was no response.)

**SPEAKER BAUER** If not, I will declare the House recessed until 3 00 P.M.

(At 12 30 P.M. a recess was taken.)

### Afternoon Session

April 28, 1941

The session convened at 3 05 P.M., pursuant to recess.

**SPEAKER BAUER** The House will be in order.

### 34. Constitution and Bylaws—Amendments

**SPEAKER BAUER** As announced this morning, the first order of business this afternoon will be consideration of the amendments to the Constitution and Bylaws which were proposed last year.

I will ask the Secretary to read the proposed amendments that have been submitted and have been on his desk for the past year, and which have been published once in accordance with the Bylaws. I think it will facilitate an understanding of these amendments if the ones pertaining to changes of dues and the fiscal year are read *in toto*, then we will take up the various sections individually. I think they will be a little clearer if the whole amendment is read right through to start with.

#### A. Change of Dues Year and Fiscal Year

**SECRETARY IRVING** The first amendment under "A," change of dues year and fiscal year, I will not read the introduction unless you especially want it.

**SPEAKER BAUER** Yes, I think it would add to the understanding of the proposed amendment by the House.

**SECRETARY IRVING** This appears on page 45 of the Annual Reports which have been distributed to you, if you want to follow along with my reading of it.

This has to do with change of the Dues Year and Fiscal Year so that both shall coincide with the Calendar Year. Previous to 1939 the Dues Year had been the Calendar Year while the Fiscal Year had begun July 1 and ended June 30 of the succeeding year. In 1939, the House of Delegates had retained the Fiscal Year from

July 1 to June 30, but changed the Dues Year to coincide with the Fiscal Year. Because this was found impractical, particularly as related to the change in the Dues Year, the Council submitted an amendment in 1940 so that both Dues Year and Fiscal Year shall hereafter coincide with the Calendar Year, as follows:

*Chapter V—Board of Trustees, Section 2—* Change last sentence by deleting words "July 1," and "June 30 of the following year," and inserting the words "January 1" and "December 31 of each calendar year" making it read:

"The fiscal year shall begin January 1 and end December 31 of each calendar year."

*Chapter I—Membership, Section 2—* Change (a), last sentence, by deleting the words "July 1 to June 30 of the succeeding year," and inserting the words "January 1 to December 31 of each year," making it read:

"The dues year shall coincide with the fiscal year, January 1 to December 31 of each year."

*Chapter I—Section 2—* Change (b), first sentence, by deleting the words "December 31," and inserting the words "May 31," making it read:

"A member whose dues and assessments are unpaid after May 31 of any current year is not in good standing."

Change (c) by deleting the words "June 30," and inserting the words "December 31," making it read:

"A member whose dues and assessments are unpaid after December 31 of any current year shall automatically be dropped from the rolls of membership of both county and state societies, without notice to such member by."

Delete (d), which now reads: "The change of the dues year shall first become operative."

Change (e) by deleting the words "May 1," and "Ensuing fiscal" and inserting the words "November 1," and "succeeding," making it read:

"Dues and State assessment of a member elected or reinstated after November 1 shall be credited to the succeeding year, all rights and privileges of membership, however, dating from the time of election."

**B Amendment of Previous Amendment.** This was notice that the Medical Society of the County of Kings had resolved to amend the preceding amendment, *Chapter I, Section 2 (e)*, to make that portion read:

"Dues and State assessment of a member elected or reinstated after October 1 shall be credited to the succeeding year, all rights and privileges of membership, however, dating from the time of election."

**SPEAKER BAUER** These amendments are now before you for your approval, or disapproval, or amendment.

**DR. WALTER D. LUDLUM, Kings** I think the last amendment should be considered first and by itself, because if that is passed it will supersede part of amendment "A."

**SPEAKER BAUER** That is very true. I was going to take them in serial order, and when we came to that one, Section 2 (e), was going to consider the amendment first.

**DR. LUDLUM** Very well, but as long as I am on my feet, so that I may not have to ask for the

course, on application to and approval by the Surgeon General, therefore be it

*"Resolved*, that the Medical Society of the State of New York instruct its delegates to the American Medical Association to introduce a resolution, memorializing the Surgeon-General to give consideration to similar action with respect to medical students inducted into active service in the present emergency."

**SPEAKER BAUER** Inasmuch as there are two resolutions of somewhat similar tenor already referred to the Reference Committee on New Business C, of which Dr Masterson is chairman, this resolution will also be referred to that reference committee

## 32 Hospital Construction—Federal Bill

### (Section 45)

**DR. JOHN L. BAUER, Kings** I have been asked to present the following resolution

"The Medical Society of the State of New York is informed that the Senate Committee on Education and Labor, of which Senator Mead is a member, has under consideration S 1230, the Hospital Construction Bill introduced by Senator Brown of Michigan. The Society, through its proper committee, has carefully studied the bill and wishes to file with Senator Mead certain objections to it in its present form

"1 It objects to the inclusion of an osteopath on the national advisory hospital council. This designation seems unnecessary, for no hospital would be created for that form of treatment alone since it is only a specialized form of treatment, and if specific forms of treatment are to be recognized, other cults may naturally seek designation,

"2 The bill seems to provide that only projects constructed within the first year shall be supervised by the advisory council. Other projects conceivably will be constructed in later years and the advisory council's authority should be extended to cover these also,

"3 The definition of the term 'hospital' in Section 18 is so worded as to permit of the construction, equipment, and operation of health, diagnostic, and treatment centers without specifying that there must be available bed capacity. Every hospital should be equipped to provide diagnostic laboratory service and to provide treatment for ambulatory cases, but the government would be defeating its one purpose of spreading medical service if it engaged in constructing health centers where free diagnostic and treatment services would be obtainable. Private physicians not employed in the centers would be unable to compete with the government centers

"Realizing Senator Mead's interest in matters of this character, it is suggested that the House authorize that this communication be sent to him with the request that he give it careful consideration, and if a hearing is held on the bill, that it be spread upon its minutes."

**SPEAKER BAUER** That is referred to the Reference Committee on New Business A, of which Dr Simpson is the chairman

Are there any other resolutions?

(There was no response)

**SPEAKER BAUER** Dr Irving has a couple of communications

## 33 Medical Relief—Direct Payment of Medical Fees to the Aged, the Blind, and Dependent Children

### (Section 73)

**SECRETARY IRVING** These communications are both on the subject of the direct payment of medical fees to recipients of certain categories of relief. These letters have been sent to the central office, one from Broome County Society and the other from Wyoming County Society.

The following communication is from the Broome County Society

"The matter of direct payment to physicians by recipients of old-age assistance was brought before our Medical Society at the meeting held April 10. After considerable discussion, the following resolution was passed

"That the Broome County Medical Society objects very strongly to the present method of paying doctors for care of old-age and blind recipients of relief, and that this Society go on record as above, and that a copy of this motion be sent to the Secretary of the State Medical Society and that it be read at the meeting of the State Society in Buffalo."

The resolution passed by the Wyoming County Medical Society at its meeting held on April 9 reads

"It was voted that the Society go on record as being opposed to the new method of paying medical fees directly to old age relief cases and that the Board of Trustees of New York State Medical Society be notified of this action."

**SPEAKER BAUER** Those two communications will be referred to the Reference Committee on New Business B, of which Dr DiNatale is the chairman

If there are no other resolutions, the Chair will recognize Dr Heyd.

## EXECUTIVE SESSION

**DR. CHAS. GORDON HEYD, New York.** Mr Speaker, I would like the courtesy of the House of Delegates to move that the House of Delegates go into executive session, the House being purged of all other than delegates, and that no stenographic record be made of the proceedings while in executive session.

**DR. CLARENCE G. BANDLER, New York.** I second that motion.

There being no discussion, the motion was put to a vote, and was unanimously carried.

**SPEAKER BAUER** The House will go into executive session, and the Chair will appoint Colonel Wentworth as sergeant-at-arms, and two husky assistants, Dr Towne, of Saratoga and Dr Brennan, of Kings.

(The House went into executive session at 11 45 A.M.)

When the House went into open session at 12 25 P.M., the following announcements were made

Announcement of various reference committee meetings before the afternoon session

**SPEAKER BAUER** Most of you were asked whether you would be interested in attending a delegate's dinner this evening, which would be purely informal, between the afternoon and the evening sessions. So far 87 delegates have said

journd session Tonight's and tomorrow morning's will be other adjourned sessions

Is there any further discussion on this amendment?

There were calls for the question, and the motion was put to a vote, and was unanimously carried

**SPEAKER BAUER** The amendment to Chapter II, Section 3, has been adopted

The next amendment that we will consider is to Chapter III, Section 1, so that it will read

"The Officers, members of the Council and of the Board of Trustees of the Society, and the Delegates to the American Medical Association shall be elected as the first business of the last scheduled session of the annual meeting of the House of Delegates"

Are there any questions or discussion on that amendment?

**DR. WALTER D. LUDLUM, Kings** Mr Speaker, while I do not oppose the amendment, I should like to raise a question as to the wording of it I hate to get to my feet on a technicality like this, but this amendment provides that a certain thing shall be the first order of business on the last scheduled session, and the next amendment to be acted upon provides that something else shall be the first order of business on the last scheduled session How can you have two firsts that are not the same thing?

**SPEAKER BAUER** I think you are right, but if you will read the present Bylaws you will find that they read practically the same in that respect, and these were merely copied from them, with no change of verbiage on the point you raise.

**DR. LUDLUM** Yes, that is true, but the first amendment provides that the election shall be the first order of business, while the second amendment provides that the nominations shall be the first order of business I think it should be made clear as to what we mean, and both sections reconciled

**SPEAKER BAUER** Nomination is ordinarily a part of the election, but I agree it is rather clumsy the way it is now worded

**SECRETARY IRVING** Can you have an election without a nomination?

**SPEAKER BAUER** Not very well

**DR. LUDLUM** I am only talking about the wording and not about the facts

**DR. KIRBY DWIGHT, New York** I would suggest the insertion of the words "nomination and election" in both places

**DR. LUDLUM** Yes, that will do it

**SPEAKER BAUER** It has been suggested that "nomination and election" be inserted in both amendments The question is first on that amendment Is there any discussion on that?

**DR. LOUIS A. VAN KLEECK, Nassau** "Last scheduled session" are the words that are used in the amendments, and refer to tomorrow morning's session?

**SPEAKER BAUER** Yes

**DR. VAN KLEECK** Tomorrow morning's session is an adjourned session, is it not?

**SPEAKER BAUER** Yes, but the way the constitution now reads it provides that "The first order of business on the second day of the session of the House of Delegates of each annual meeting shall be the nominations," which would mean that if we change the order of business so

as to make it unnecessary to have a night session on Monday, as has theretofore been the case, there would be only two sessions on Monday and two on Tuesday, and it would, therefore, put the election over until Tuesday afternoon instead of Tuesday morning with the amendment

**DR. VAN KLEECK** I understand it now

**SPEAKER BAUER** The question first is on the proposed amendment of inserting the words "nomination and election" in both proposed amendments to Chapter III, Section 1, and Chapter III, Section 4 Is there any discussion on that?

The question was called for, and the amendment was put to a vote, and was unanimously carried

**SPEAKER BAUER** We will now have the question on the adoption of the amended amendments The first one, covering the amendment to Chapter III, Section 1, I have read, and as you have just voted to amend it, it will read

"The Officers, members of the Council and of the Board of Trustees of the Society and the Delegates to the American Medical Association shall be nominated and elected as the first business of the last scheduled session of the annual meeting of the House of Delegates"

Is there any discussion on that?

The question was called for, and the motion was put to a vote, and was unanimously carried

**SPEAKER BAUER** The amendment to Chapter III, Section 1, is adopted

Now we have the amendment to Chapter III, Section 4, which amounts to the same thing It merely appears in a different place in the Bylaws, and that also has now been amended by the insertion of the words "nominations and elections," so that as it is proposed to you for vote it now reads

"The first order of business at the last scheduled session of each Annual Meeting of the House of Delegates shall be the nominations and elections for officers of the Society"

Is there any discussion on that?

The question was called for, and the motion was put to a vote, and was unanimously carried

**SPEAKER BAUER** The amendment to Chapter III, Section 4, is adopted

**D Expenses of District Branch Presidents** Attending the House of Delegates as District Delegates **SECRETARY IRVING** Dr Theodore West of Westchester County introduced the following amendment at the 1940 House of Delegates to amend Chapter X, Section 1, by insertion of an additional sentence after the fifth sentence to read

"Presidents of the District Branches sitting in the House of Delegates shall be allowed necessary expenses"

**SPEAKER BAUER** That amendment is before you for adoption. Is there any discussion on it?

The question was called for, and the motion was put to a vote, and was unanimously carried

**E Duties of Officers (Sections 10, 36)** **SECRETARY IRVING** The next amendment, Mr Speaker, on the list of amendments was put in by Dr George W Kosmak As I understood

floor again, let me say why we proposed that amendment of the previous amendment. The argument of Kings County Society, which I think should apply to the other societies as well, is that a reinstatement after November 1 is of small value and is of little advertising value to the Society to secure reinstatement. The county society meeting is held on the Third Tuesday, and after the Third Tuesday of November there is very little of the year left. If we can offer them the value of the remaining year from the Third Tuesday of October it will be a much stronger advertising point, and the county society and the State Society will lose very little by the contribution that we make in that way. I think that is the argument that our society has for October 1 instead of November 1.

**SPEAKER BAUER** I take it you move the adoption of the amendment to Chapter I, Section 2 (e), as proposed by the Medical Society of the County of Kings.

**DR. LUDLUM** Yes.

**DR. JOHN L. BAUER, Kings** I second that amendment.

There being no discussion, the motion was put to a vote, and was unanimously carried.

**SPEAKER BAUER** We will now consider the amendments as a whole. Inasmuch as these amendments to Chapter V, Section 2, and Chapter I, Section 2, (a), (b), (c), (d), and (e) as amended, are all closely interrelated, and one can hardly be adopted without the others, I will entertain a motion that they be considered in one motion. Is there any objection on the part of the House to handling them in that manner?

There was no dissent.

**SPEAKER BAUER** Hearing none, you have the motion to adopt the amendments to the Constitution and Bylaws as listed in "A" on page 45, and as amended by "B," appearing on the same page, which you have already adopted, before you. In other words, this changes the dues year and the fiscal year to January 1 to December 31 as the dues year formerly was prior to two years ago. Are you ready for the question?

The question was called for, and the motion was put to a vote, and was unanimously carried.

**SPEAKER BAUER** I declare Amendments "A" and "B" adopted.

**C House of Delegates—Rearrangements of Sessions** **SECRETARY IRVING** Now we come to Section C of these amendments entitled "Rearrangements of Sessions of the House of Delegates."

This amendment was presented to the 1940 House of Delegates by Dr. Peter Irving, General Manager, reading as follows:

*Chapter III, Section 4, the first sentence shall be altered by the substitution of the words "last day" for the words "second day" making the first sentence of Section 4 read*

"The first order of business on the last day of the session of the House of Delegates of each annual meeting shall be the nomination for officers of the Society and other members of the Council, a member of the Board of Trustees, delegates to the American Medical Association, and the ap-

pointment of a sufficient number of tellers by the Speaker."

The House instructed the Council to reword this amendment in order to clarify its meaning. Thus the Council has done, at the same time taking cognizance of notice of an amendment by Dr. Arthur J. Bedell that would add a new Section to Chapter II of the Constitution to the effect that

"No new resolution may be presented on the last day of session of the House of Delegates without a two-thirds affirmative vote."

These two amendments have been fitted together by the Council with the full approval of Dr. Bedell, and the result follows:

*Chapter II, Section 3, add three additional sentences, instead of adding a new section, to read*

"At least thirty (30) days before the Annual Meeting of the House of Delegates, the Speaker shall announce a schedule of the adjourned sessions of the House of Delegates. This schedule may be amended by the House of Delegates during its convention. No new resolution shall be introduced at the last scheduled session except by a two-thirds vote of the House."

*Chapter III, Section 1, to effect the purpose of the amendment to Chapter III, Section 4, it was found necessary to change the first sentence of this Section by deleting the words "second day's," and inserting the words "last scheduled," making it read*

"The Officers, members of the Council and of the Board of Trustees of the Society, and the Delegates to the American Medical Association shall be elected as the first business of the last scheduled session of the annual meeting of the House of Delegates."

*Chapter III, Section 4, change the first sentence of this Section by deleting the words "on the second day of the session of the House of Delegates of each Annual Meeting" and inserting the words "at the last scheduled session of each Annual Meeting of the House of Delegates," making it read*

"The first order of business at the last scheduled session of each Annual Meeting of the House of Delegates shall be the nominations for officers of the Society."

**SPEAKER BAUER** The purport of these amendments is perfectly clear to everyone in the House, or would they like any further information? If not, you have them before you for consideration. We will take up first the amendment to Chapter II, Section 3, which would add the following to that section:

"At least thirty (30) days before the Annual Meeting of the House of Delegates, the Speaker shall announce a schedule of the adjourned sessions of the House of Delegates. This schedule may be amended by the House of Delegates during its convention. No new resolution shall be introduced at the last scheduled session except by a two-thirds vote of the House."

Is there any discussion on the amendment?

**DR. HARRY ARANOW, Bronx** That word "adjourned" sessions is not quite clear to me.

**SPEAKER BAUER** The original session of the House of Delegates is, for example, the one we had this morning. This afternoon is an ad-

**MEDICINE** This insurance must be considered from the following viewpoints

- 1 It must be nonprofit
- 2 It should involve cash indemnity and not medical service
- 3 Patients must have absolute freedom of choice in selecting a duly qualified physician from all those qualified to practice and willing to give service within the locality covered by the operation of the company
- 4 No third party may be permitted to come between the patient and his physician in any medical relation. The method of providing service must retain a permanent confidential relation between patient and physician
- 5 The fees should not be below those of the workmen's compensation schedule, but there must be no interference with higher fees being charged the higher income groups
- 6 All features of medical service must be under the control of the medical profession, such control to be exercised by or under the direction of the Medical Society of the State of New York or one of its component county societies
- 7 The eventual aim of any plan should be to cover medical care in the office, home, and hospital.

Your reference committee feels, however, that active propaganda in placing these principles before the medical and lay public is an urgent need and would recommend that the special subcommittee continue its study of this phase of their report and advise as to its possible solution. Your reference committee observed that much discussion has brought this subject to the attention of the lay public and the public is becoming Medical Indemnity Expense Insurance minded.

While there are many in the low-income working population groups who are interested in the prepayment for adequate medical care and provisions for cost of serious catastrophic illness, yet, it is the opinion of the reference committee that the medical profession has not as yet sufficiently supported any plan. Without such medical support, all plans will fail. Your reference committee, in offering this comment, is fully aware of the lack of insurance experience along these lines and urges an active attitude by the profession. This, too, should be studied by our subcommittee and, if possible, concrete recommendations should be advanced. Continued sacrifices on the part of the medical profession will be the means of obtaining the needed actuarial data. Exploitation of the physician should, however, be avoided.

A cold analysis of this situation has been described on page 717 of the April 1, 1941, number

- 1 First and foremost, the people of the United States have always been able to secure medical attention from practicing physicians whether they had the money or not. It may be that of all the necessities that the human must have, he can secure the religious service and medical care easiest and most certain of all. Someone must pay for food, housing, fuel, clothing, and hospitalization, but practically every patient without cash can secure adequate medical care. Therefore it

does not appear to the prospective patient that he is so much in need of insurance to pay the cost of medical care

- 2 Many people of the low-income group feel that they can afford to buy only one, either a hospital, or medical care, insurance contract. Most patients will feel that if they can have their hospital care provided, they will find a physician to take care of them. They fully intend to pay for both, but the experience of the public has been that they may later on pay for medical care while hospital care is often a proposition where payment is demanded a week in advance. This statement is made with no reflection on hospital methods inasmuch as hospitals, to maintain themselves, must receive revenue. The same may be said of physicians, but the physician has much more personal relationship with the patient than does the hospital

- 3 There are many who, having a regular small amount of cash, prefer to buy life insurance with this amount. There is, of course, no argument against proper protection with life insurance. It may be that after all other bills, especially those incidental to the immediate death, are paid, that some part of such fund may be used for payment of medical care. There is again no reflection on the insured, custom has decreed quite well the relative order in which those funds will be used. It takes salesmanship and some persuasion to sell even small amounts of life insurance

- 4 Advertisement by means of the personal agent, radio, and printed word offers strong inducement to the apparently well person to spend his or her money for the thousand and one necessities and luxuries of our everyday life. This competition is quite too strong to allow a universal system of saving money to pay for medical care when no signs or symptoms of illness appear on the horizon. In fact, this competition has gone to the point where the individual has borrowed and is considerably in debt for many of the things he claims to own. It is manifestly quite difficult to lay aside money for medical care when the installment payments are pressing. Those who press for installment payments have a more successful way of achieving their ends than do those who would make the health consideration of the individual their first object

- 5 The American, having been accustomed rather to employ independently his physician, looks somewhat askance at these plans for medical expense indemnity insurance, asking the questions: Am I sure to get the doctor of my choice? Is this a panel system? Are the physicians going to be interested when working on a group basis? Are inexperienced people experimenting with our medical care? When the corporation grows, will it gain some political manipulation within and without? The answers to these questions may be easily made when the method of procedure adopted by the New York State Medical Society is understood, but it will take

him this morning, it was to the effect that he wished to withdraw that amendment

**SPEAKER BAUER** The amendment is before the House. It can only be withdrawn by motion.

**DR. WALTER D LUDLUM** I move that out of deference to Dr Kosmak, who introduced the amendment, that the amendment be withdrawn.

**DR. SAMUEL B BURK, New York.** I second that motion.

**SPEAKER BAUER** Is Dr Kosmak here?

**DR. KIRBY DWIGHT, New York.** No, he just stepped out of the room for several minutes.

**SPEAKER BAUER** I think it might be courteous to wait until he returns before we take action on the withdrawal of that amendment, so he can speak on it himself, and if there is no objection we will pass that over temporarily and come back to it when he is here.

Continue, please, Mr Secretary!

**F Jurisdiction of Board of Censors.** **SECRETARY IRVING** Dr Peter Murray of New York County introduced the following amendment at the 1940 House of Delegates to amend *Chapter VI, Section 2*, by repealing and deleting therefrom the second sentence of said section beginning with the words "Any member" and ending with the words "component county society" and enacting and inserting, in lieu thereof, the following:

"Any member of any component medical society who shall have been disciplined or directed to suffer discipline in any degree by any final decision of his county medical society and who shall have exhausted his right of appeal, if any, with any such county medical society, feeling aggrieved by the decision of such society, may appeal to the Board of Censors of this Society from the decision of such component medical society by filing a notice of appeal with the Secretary of this Society and with the Secretary of such component medical society within three months after such final decision by such component medical society."

**SPEAKER BAUER** Is there any discussion on that?

The question was called for, and the motion was put to a vote, and was unanimously carried.

**SPEAKER BAUER** The amendment to Chapter VI, Section 2, is adopted.

Has Dr Kosmak come in yet?

**CHORUS** No.

**SPEAKER BAUER** While we are awaiting his return, the Chair will listen to reference committee reports.

Is any reference committee ready to report?

### 35 Report of Reference Committee on Report of Council—Part V—Medical Expense Insurance

**DR. SAMUEL B BURK, New York.** The Subcommittee of the Council Committee on Public Relations set up in 1939 to study and advise on Medical Expense Insurance was continued by the Council and consisted of Herbert H Bauckus, M D, Buffalo, *Chairman*, Walter T Dannreuther, M D, New York, and William Hale, M D, Utica. Their report has been approved by the Council.

A comprehensive review of the present status of the problem of medical expense insurance is

presented in a monograph of almost four thousand words. Since it contains data of vital economic and sociologic significance, your reference committee recommends that every member of the Medical Society of the State of New York become acquainted with its content.

Your reference committee has assiduously studied this report and wishes to direct your attention to the following:

The subcommittee approved Recommendation IV on a General Program of Medical Care of the policy of the House of Delegates of the American Medical Association at a special meeting in 1938 and held that hospital service insurance should be a community project. Plans appertaining to hospital service insurance and group hospitalization plans should confine themselves to hospital facilities and not include any type of medical care. In the opinion of the reference committee local health needs should be the guiding factor in the formulation of such plans, since conditions locally vary not only in this state but in all states throughout the United States.

Cash indemnity insurance can and should be developed to cover in whole or in part the costs of emergency and prolonged illness. We wish to emphasize that all agencies set up to approve such insurance should comply with State statutes and regulations to insure their soundness and financial responsibility. Their approval by county medical societies is of importance. In this connection, your reference committee takes cognizance that the local medical societies should act in an advisory capacity with the State Insurance Department and State Department of Welfare in an effort to eliminate groups with inferior standards for medical care. The welfare needs of the public should be the sole and only guide.

The subcommittee reiterates the stand of organized medicine that compulsory health insurance is a complicated bureaucratic system which would increase government costs and thereby raise taxes. More significant, it would lend itself to political control and manipulation. Your reference committee takes this opportunity to stress these thoughts.

Your reference committee, in agreeing that illness arising purely in and out of the course of employment, is, of course, subject to the sound principles of the Workman's Compensation Law, recommends that all necessary precautions should be taken to segregate carefully such cases from those which are not directly associated with employment thereby eliminating an entering wedge for the justification of placing all illness under the Workman's Compensation Laws. These features of the report must be emphasized.

The 1939 Enabling Act (Article IX-C) which brings into legal being the nonprofit cash indemnity insurance plans, allows a liberal interpretation by the constituted authorities (State Insurance Department and the State Department of Welfare) yet, as previously stated, the county medical societies representing the medical profession could and would be useful in an advisory capacity.

Your reference committee wishes to record the approval of the "Tentative Basis and Suggestions for Medical Expense Indemnity Insurance," which appears on page 716 in the April 1, 1941, issue of the NEW YORK STATE JOURNAL OF

worthwhile and more likely to bring about results than a larger group

The need of better dental care during the school age has again become evident in the examination of the present Selective Service for Defense. Therefore, the forming of a *committee of medical men and dentists* is most timely. The medical group should include at least one pediatrician

This same Selective Service has brought to the fore the need of more and better eye care. A survey of the eyesight of all school children in our state is certainly important and should be made by ophthalmologists and made at once

Therefore, the reference committee recommends that the Council be instructed by this House of Delegates to continue its efforts along the present lines to the end that doctors be put in charge of health and health problems among children of school age, eventually bringing back to the Department of Health the health of our school children, because this is certainly where it belongs, and Health Education should be continued under the guidance of educators, whether lay or medical.

I move the adoption of the report

DR. VINCENT S. HATWARD, Bronx. I second the motion.

There being no discussion, the motion was put to a vote, and was unanimously carried

SPEAKER BAUER: Thank you, Dr. Hellman! The Chair recognizes Dr. Chas. Gordon Heyd, Chairman of the Committee on Lucien Howe Prize.

### 38. Report of Committee on Prize Essay Awards

DR. CHAS. GORDON HEYD, New York. Mr. Speaker and Members of the House of Delegates, the Lucien Howe Prize Committee consisted of Dr. Conrad Berens, Dr. John E. Scarff, and myself

There were three essays submitted that in the opinion of the examiners were of outstanding merit. The first, and it was first in the unanimous opinion of the three men, was an original contribution on "Surgical Interruptions of the Paludofugal Fibres." The synonym was "Abbot Martino Fontana, Florence, 1781"

SPEAKER BAUER: The Secretary will open the envelope at this time and reveal who the author actually is

SECRETARY IRVING: This is a sealed envelope, with the motto on the outside, and the name of the author inside, which I will now open. The name is H. Russell Meyers, of Brooklyn, New York

DR. HEYD: The second paper in order of merit was entitled "Choroidosis Centralis Serosa." The synonym was "Quot homines, tot sententiae"

SPEAKER BAUER: The Secretary will open the envelope at this time and reveal who the author of that paper is

SECRETARY IRVING: Dr. Walter F. Duggan, of Utica, New York.

DR. HEYD: I believe I should make honorable mention of the third paper on "Repair of Recent Lid Lacerations (Anagnostikus)," which was of outstanding merit, but the two previously quoted received the highest awards, as I said, from all of the examiners

SECRETARY IRVING: The author of the third paper is Dr. Henry Minsky, of New York.

SPEAKER BAUER: Thank you, Dr. Heyd! I

am sure the House congratulates these gentlemen on having received these awards

Is any other reference committee chairman ready to report?

### 39. Report of Reference Committee on the Report of the Council—Part IV—Publications, and Medical Publicity

PUBLICATIONS. DR. ARTHUR F. HEYL, Westchester. The information given under this heading in the Annual Report of the Council is indeed gratifying. No words of this committee can fully acquaint you with the mass of detail, magnitude of the task, or manner and method of co-operative procedure which enabled the Publication Committee so ably and economically to produce the JOURNAL and the *Directory* which is in the process of compilation.

In his report to the Council, dated February 28, 1941, the Business Manager stated that for the six months then last elapsed, the net cost of the JOURNAL was \$6,465.58 less than the proportionate budgetary allowance, and that a comparison of 1939 and 1940 calendar year audits, after adjustments for comparison, showed an improvement in net cost of \$12,048.13

This Publication Committee of five, consisting of the General Manager, Dr. Peter Irving, the Business Manager, Mr. Dwight Anderson, the Literary Editor, Dr. Laurance D. Redway, the Representative of the Trustees, Dr. Thomas M. Brennan, and the Treasurer of the Society, Dr. George W. Kosmak, deserves the complete support and commendation of this House of Delegates and the 17,694 members of the Society here represented. The high quality of the editorials, scientific papers, new arrangement of material and recently included sections on Therapeutics, Diagnosis, and Pathology, have elevated the value of the JOURNAL as a whole. As individual physicians, we should become better acquainted with what comes to us twice monthly in our JOURNAL, and take some measure of pride in the fact that it is the largest state medical publication and is received by more physicians in the United States than any other except the *Journal of the American Medical Association*

The work of the Publication Committee would have been greatly curtailed without the invaluable contributions of Dr. Peter Irving as Managing Editor of the JOURNAL. Furthermore, in a great measure the success of the JOURNAL is due to the splendid editorials of Dr. Laurance D. Redway and his indefatigable study of general public affairs as well as medical problems

The diversified knowledge thus gained is necessary for such excellent editorial work. Dr. Redway's native interest in radio coupled with a desire to coordinate editorial activities with the public relations work of the Society conspired to make his voluntary services in the perfection of radio programs for the Society extremely valuable

Matters relating to publications are technical, specialized, and can be thoroughly known only by those who have been long associated with actual production of texts, books, magazines, and technical journals. Your committee, therefore, believes that it is economically essential, justly fair and in a sense a reward for effort and achievement, that this Publications Committee of five be continued in office

Your Reference Committee on the Report of

time before the public will have full confidence in these plans

- 6 When business is good and people generally are working, the worker has little trouble in paying for medical services and he will not worry much about this when he and his family are well. When he is out of work, then will arise the difficulty of securing funds to pay for medical insurance premiums

Again the reference committee recommends that the various nodalties for the education of the public be used

An erudite discussion of the alleged fallacy of compulsory health insurance as a replacement of nonprofit medical expense insurance was undertaken by our Council subcommittee and this presents a basis for considerable thought

While it is true that medical expense indemnity insurance is comparatively new, your reference committee feels that every effort should be made to bring it into practical being as promptly as is possible. On the other hand, your reference committee agrees that any plan per se cannot overcome poverty, and in accord with the opinion of the subcommittee the medical profession is ready to stand by to give every economic strata of our population the best and most modern medical care available. It is the feeling of the reference committee that every county medical society should and must attempt some solution of this pressing problem. In conclusion, your reference committee believes that the subcommittee has clearly and concisely spread itself on the record so that each local community will have specific principles to guide it. The subcommittee is to be congratulated

This report is signed by myself as *chairman*, John T. Donovan, Erie, Emul Koffler, Bronx, Andrew Sloan, Oneida, and Scott L. Smith, Poughkeepsie

I move the adoption of this report

DR. KIRBY DWIGHT, *New York*. I second that motion

There being no discussion, the motion was put to a vote, and was unanimously carried

### 36 Constitution and Bylaws—Amendment

E Duties of Officers (*Sections 10, 34*)  
SPEAKER BAUER Dr. Kosmak, while you were out of the room, we were considering the amendment to the Constitution and Bylaws which you proposed last year in connection with Chapter VII, by the insertion of a new section, 10-A, to read

"An assistant to the Treasurer shall be appointed annually by the Council at its organization meeting, who shall serve and be subject to the supervision and order of the Treasurer, shall be adequately bonded, have no voice or vote in any meeting, shall be suitably remunerated through an order of the Council and be empowered to sign checks in special rotating funds to be set up as needed by the Trustees"

Dr. Irving stated that he believed you wished to withdraw the motion

DR. GEORGE W. KOSMAK Yes

SPEAKER BAUER A motion was, therefore, made that the amendment be withdrawn, but as you were out of the room we felt it was courtesy

to permit you to speak, if you so desired, before acting upon it

DR. KOSMAK I included that recommendation, Mr. Chairman, in my report, and I think the reference committee will bring that up in due time

SPEAKER BAUER Yes, but we have the specific amendment to act upon at this time

DR. KOSMAK I move it be withdrawn

SPEAKER BAUER It has already been moved and seconded that it be withdrawn. Is there any discussion on it?

The question was called for, and the motion was put to a vote, and was unanimously carried

SPEAKER BAUER The amendment is withdrawn

Has any other reference committee chairman a report to present at this time?

### 37 Report of Reference Committee on Report of Council—Part III—School Health Program

DR. ALFRED M. HELLMAN, *New York*. The Committee on Public Health and Education has continued its good work and rendered through the Council a very satisfactory report which your reference committee wishes herewith to praise. The efforts being made are along correct lines. We wish to repeat that medical work in schools should be in the keeping of properly trained graduates in medicine working either under the Board of Health or, if independently, they should be responsible to no lay group or individual except to the Department of Education itself

School Health Service should provide the best type of Health Service for all children of school age. The child should be impressed with the fact that the best type of medical care can only be obtained under the supervision of a doctor of medicine. The teaching of health measures should be done by the trained teacher, lay or medical

To accomplish this object there need be no serious change in the state's setup, but there should be a separation of the Division of Health and Physical Education into two departments, each directly responsible to the Department of Education. (1) Health, and (2) Physical Education. To have a physical educator over an M.D. must fail to give the best results. The doctor must decide which child shall take the full physical education program, and which child may indulge in only limited physical activities, and to what extent

The work and actions of Dr. Hambrook are especially noteworthy. His minority report to the Board of Regents as against the rest of the Regents' Advisory Council was much along the lines here set forth, and this suggests, therefore, that the Medical Society should be given greater representation on the Regents' Advisory Council

The Council rightly went on record as opposed to the Schwert Bill—a Federal bill which would interfere with states' power in such matters. Health is universally needed but to obtain it different localities, because of different climates, different homes from which the pupils come, require different regulations and easier methods of change as conditions warrant. Health needs are not static

The appointment of a small subcommittee to concentrate on a School Health Program is

adoption of the Report of the Reference Committee on Medical Publicity

DR. SAMUEL E. APPEL, *Dutchess* I second the motion to adopt the report of the Reference Committee on Medical Publicity

There being no discussion, the motion was put to a vote, and was unanimously carried

SPEAKER BAUER Now you have before you the motion to adopt the report as a whole

There being no discussion, the motion was put to a vote, and was unanimously carried

SPEAKER BAUER Thank you, Dr Heyd!

40 Report of Reference Committee on Report of Council—Part VIII—Medical Preparedness

DR. JAMES R. REULING, JR., *Queens* The committee consisted of myself as chairman, Romeo Roberto, Albert G Swift, Thomas B Wood, and Warren Wooden

Your reference committee has read, studied, and digested that part of the report of the Council having to do with Medical Preparedness. We have nothing but approbation for the work of the committee consisting of Drs Bauer, Wentworth, and Kopetzky, and the effective organization that has been set up under its chairman, Dr Kopetzky

Your committee commends the component county medical societies and their duly elected officers for their whole-hearted and efficient co-operation in mobilizing the profession in their respective communities

The various suggestions that have been advanced for taking care of the practice of those physicians who are absent because of their military service have been carefully scrutinized and your committee takes pleasure in endorsing the Bauer or some similar plan as the most feasible one to cover the situation.

We concur with the committee's aim that the alien physician and the foreign graduates licensed to practice in this state be treated on a basis of equality with the American doctor before the law in regard to commissions and in regard to military service, otherwise it would be an injustice to our native graduates of American colleges, as they would be called to duty and their practice would be left to the alien physician and graduates from foreign medical schools. Manifestly, this is an injustice to the patriotic native American graduate of an American school.

The committee, therefore, recommends that the delegates to the American Medical Association be instructed to introduce a resolution in that body calling upon the proper governmental agency to treat these adopted citizens and also graduates of foreign schools on terms of equality with our own graduates who are native-born citizens, so that the regulations will not work out to the detriment of the graduate of an American school.

I move the adoption of the recommendation and the report as a whole

DR. THOMAS B WOOD, *Kings* I second that motion

SPEAKER BAUER You have before you the report of the reference committee, which contains one specific recommendation for memorializing the American Medical Association. Is there any discussion on it?

The question was called for, and the motion was put to a vote, and was unanimously carried.

41 Report of Reference Committee on New Business A—Medical Practice Act, Definition of Word "Antiseptic"

(Section 13)

DR LEO F SIMPSON, *Monroe* On the resolution introduced by Dr Heyd, of New York, reading

"WHEREAS, the word 'antiseptic' has never been clearly defined as used in the Medical Practice Act, Paragraph 2, Section 1262, be it

"Resolved, that for the purpose of administration the term 'antiseptic,' as used in this law, shall be construed to refer to a substance employed for external application only, or to serve as a solution for the sterilization of instruments, the effect in both instances being to prevent or inhibit the growth of microorganisms " your reference committee recommends this resolution be adopted and presented to the Board of Regents of the University of the State of New York.

DR. WALTER P ANDERTON, *New York* I second the motion.

SPEAKER BAUER You have before you the report of the reference committee, which carries with it the recommendation for the adoption of the resolution and its presentation to the Regents. Is there any discussion?

The question was called for, and the motion was put to a vote, and was unanimously carried

42 Report of the Reference Committee on New Business A—Health and Accident Insurance for Interns

(Section 24)

DR LEO F SIMPSON, *Monroe* On the resolution presented by Dr Abraham Klein, of Kings, reading

"WHEREAS, hospital interns spend some of the best years of their lives in caring for the sick at very little or no compensation, and

"WHEREAS, the risk of infection or injury to hospital interns is very great, and

"WHEREAS, many hospital interns in the past have become disabled for life through accident or illness, therefore be it

"Resolved, that the Medical Society of the State of New York recommend to the New York State Legislature that a bill be introduced making it obligatory for hospitals in New York State to provide health and accident insurance for interns serving in their hospitals "

your reference committee recommends that this subject be referred to the Council for study and for such action as may be deemed wise, and I so move

DR. JOHN T DONOVAN, *Erie* I second the motion.

There being no discussion, the motion was put to a vote, and was unanimously carried.

43 Report of the Reference Committee on New Business A—School Health Program

(Section 27)

DR LEO F SIMPSON, *Monroe* On the resolution presented by Dr Romeo Roberto, of the Medical Society of the County of Westchester, reading

"WHEREAS, the problem of school health service involves many aspects, requiring the

the Council, Part IV, Publications, recommends this, and moves the approval of this recommendation.

DR. MAURICE J. DATTELBAUM, *Kings* I second that motion

There being no discussion, the motion was put to a vote, and was unanimously carried

DR. HEYL The *Directory* speaks for itself every time it is used, and by some of us this is frequently It justifies its cost of about ninety-five cents for each member, and this may be reduced in subsequent issues The criticism related in the Council report regarding the alphabetical inclusion of New York City and its boroughs is under consideration by them, and your Reference Committee on the Report of the Council—Part IV—Publications, for the convenience of those with conditioned reflexes, recommends a combination of the older method and the Council's suggestion, namely, that New York City and each of its boroughs be listed alphabetically after Manhattan, and grouped in the front of the *Directory*

Mr Speaker, I move the approval of this recommendation

DR. GEORGE F. BAEHR, *New York* I second the motion.

There being no discussion, the motion was put to a vote, and was unanimously carried

DR. HEYL Your committee further recommends that the *Directory* be alphabetically thumb-indexed or, if this is too expensive, that some method be evolved and included in the new *Directory* of rendering the alphabetical listing of physicians and communities more easily available

Mr Speaker, I move the approval of this recommendation

DR. SAMUEL E. APPEL, *Dutchess* I second that motion

There being no discussion, the motion was put to a vote, and was unanimously carried

DR. HEYL Mr Speaker, I move the adoption of this report on Publications, as a whole

DR. JOHN L. BAUER, *Kings* I second it

There being no discussion, the motion was put to a vote, and was unanimously carried

**Medical Publicity** DR. HEYL This title embraces many projects radiating from the office and personage of the Director of the Public Relations Bureau, Mr Dwight Anderson As Business Manager of the JOURNAL, *Directory*, and Technical Exhibits in the annual meetings, he is provided with integrated contacts, interests, and personalities which enrich the more highly coordinated execution of all public relations problems The effect of the above statement is evident in the Council's report where specific instances of broad interest and importance are mentioned It is obvious, as the report so creditably informs us, that the Director alone could not have accomplished so much in the past year without the aid and support of the various members of the Publication Committee mentioned above and the use of ideas, special articles, editorials, and projects which were suggested or developed by individuals from the Society at large who are not a component part of the Public Relations Bureau

Thus, by many well-timed releases to the public press from JOURNAL editorials, by cooperating in obtaining the publication of certain special

articles, such as one in the *Journal of Living* by Dr Samuel J. Kopetzky, answering one by Hon. Robert Wagner, Jr., and by the publication and distribution of pamphlets such as "Give the Doctor a Break," by Dr Floyd Burrows, much has been done to provoke thinking by the public in terms of the practice of medicine and their individually related family physicians

The further development of "Club Talks," suggested by Mr James E. Bryan, Executive Secretary of the Medical Society of the County of Westchester, who assisted in the preparation of some, supplied "ready-made" informative essays for luncheon groups, women's clubs and civic organizations throughout the state on such subjects as "Pneumonia and the Common Cold," "Rheumatic Heart Disease," etc

Credit again should be given to Mr Dwight Anderson for his book *What It Means to Be a Doctor*, which had a widespread distribution throughout the United States, and for a companion book soon to be published, and for so ably addressing the Michigan State Medical Society in September, 1940, on public relations

Finally, the Council reports on the invaluable research in connection with *Broadcasting* which was conducted by the Bureau of Public Relations and the Council Committee on Medical Publicity Dr Federick M. Miller, Sr., Dr Francis N. Kimball, and its chairman, Dr Floyd S. Winslow, before they fulfilled the mandate of the House of Delegates to engage in radio activities

The depth and significance of this foundation research are detailed in Bulletins Nos. 37 and 38, Radio, 1 and 2, "The Doctor Takes to the Air," and "Doctors for Defense" Many of you have read these bulletins and appreciate the necessity of this preliminary work for which the Service Bulletin of the Federal Radio Education Committee has the highest praise Criticisms from this bulletin appear on page 10 of the current Annual Reports

The fruit of these labors is the first series of dramatized programs, "Doctors for Defense," which many of you have heard on Wednesday nights from 10:00 to 10:30 over Station WMCA, "First on Your Dial." Other thought-provoking series for the public will follow

It is noteworthy that the script of these dramatizations will be available on loan for general use elsewhere in the United States through the Educational Radio Script Exchange, United States Office of Education, Washington, D. C. It is even probable that this program will become national after an experimental demonstration to determine the degree of audience response

Thus, by publications, editorials, and their releases, pamphlets, books, special articles in national magazines, club talks, and, at long last, by radio, the JOURNAL, the Public Relations Bureau and the Council Committee on Medical Publicity have charted their course, set their sails May we all man the capstan to heave anchor with them as they begin their voyage into the troubled waters of these times

Mr Speaker, I move the adoption of this report on Medical Publicity and of the Report of your Reference Committee on the Report of the Council—Part IV—as a unit

SPEAKER BAUER We will take them up separately First, you have before you the

This designation seems unnecessary, for no hospital would be created for that form of treatment alone since it is only a specialized form of treatment."

Paragraph 3 to be modified in phraseology to read as follows

"The definition of the term 'hospital' in Section 18 is so worded as to permit of the construction, equipment and operation of health, diagnostic and treatment centers without specifying that there must be available bed capacity. Such centers, we believe, without available bed capacity would not constitute a hospital."

If Dr. Bauer will accept these changes, which do not modify the essential intent of the resolution, your committee recommends its adoption.

DR. JOHN L. BAUER, *Kings* Yes, I will accept the changes

DR. SNIPSON I so move

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried

#### 46 Report of Reference Committee on the Report of the President

(Section 7)

DR. JOHN B. D'ALBORA, *Kings* Your Reference Committee on the Report of the President has read the report of his stewardship during the past year with a great deal of satisfaction. It is brief and to the point. It has a ring of sincerity, the sort of valedictory one would expect from Dr. James M. Flynn. He expresses his thanks to the Council, the several committees, the general manager, executive officer, counsel, and the director of publicity and office personnel, for their "loyal and willing service" throughout the year and for making his task "easy and altogether pleasant." Characteristically, Dr. Flynn takes no personal credit for the many accomplishments of his administration. We approve most heartily of his final word of caution. "We must remain ever watchful if we wish to maintain our present tried and true progressive system of caring for the health of our people."

Your reference committee also has studied the supplementary report of the President of providing greater support in funds and personnel to the Committee on Public Health and Education, and expresses the hope that means may be found to carry out this suggestion.

This report is signed by myself as chairman, Stephen H. Curtis, *Rensselaer*, Howard Fox, *New York*, Leon M. Kysor, *Steuben*, and Merwin E. Marsland, *Westchester*.

I move the adoption of the report

DR. MERWIN E. MARSLAND, *Westchester* I second the motion.

There being no discussion, the motion was put to a vote, and was unanimously carried

SPEAKER BAUER Thank you, Dr. D'Albora!

#### 47 Report of the Reference Committee on Report of the Council—Part XI

Motor Vehicle Drivers—Medical Examination  
DR. HARRY S. BULL, *Cayuga* Your reference committee approves of the report in its entirety, with the exception of that paragraph which begins "Regarding drunken drivers." We recommend that this portion of the report be referred

back to the committee for further study and recommendation. I so move

DR. EMILY D. BARRINGER, *New York* I second the motion

SPEAKER BAUER You have before you the report of the reference committee which recommends approval of that section of the report except the paragraph pertaining to drunken drivers, which is to be referred back to the Council. The motion is on the adoption of the committee's report. Is there any discussion on it?

The question was called for, and the motion was put to a vote, and was unanimously carried

Deaf and Hard of Hearing  
DR. HARRY S. BULL, *Cayuga* The committee approves of this section of the report. We would recommend that the Committee on the Deaf and Hard of Hearing of the State Medical Society be continued for further study of this problem. We make this recommendation in view of the fact that the commission, which was formerly a state commission, has now been discontinued, therefore, we recommend that the committee which is functioning in the State Society be continued.

SPEAKER BAUER Do you make that as a motion?

DR. BULL Yes

DR. STANLEY C. PETTIT, *Richmond* I second that motion

SPEAKER BAUER You have before you the motion of the chairman of the reference committee, which approves the report of the Council pertaining to the Deaf and Hard of Hearing, and recommends the continuance of the State Society's committee on that subject. Is there any discussion on it?

The question was called for, and the motion was put to a vote, and was unanimously carried

Medical Practice Act—Enforcement.  
DR. HARRY S. BULL, *Cayuga* We approve the report of the committee, and recommend that further annual reports on the workings of the Medical Practice Act be made to the House of Delegates from year to year. I move its adoption.

DR. KENNETH F. BOTT, *Greene* I second the motion

SPEAKER BAUER You have heard the report of the reference committee chairman recommending that further reports from year to year be made on the Medical Practice Act Enforcement. Is there any discussion on it?

The question was called for, and the motion was put to a vote, and was unanimously carried.

Elchacker as New York Telephone Company  
DR. HARRY S. BULL, *Cayuga* Your reference committee approves the report of the committee as submitted. I move its adoption.

DR. STANLEY C. PETTIT, *Richmond* I second the motion

There being no discussion, the motion was put to a vote, and was carried unanimously

Basic Science Law  
DR. HARRY S. BULL, *Cayuga* Your reference committee approves the report of the committee as presented in the annual report. I move its adoption.

DR. EMILY D. BARRINGER, *New York* I second the motion

consideration of school physicians, public health experts and experts in health education, in addition to physicians engaged in private practice, and

"WHEREAS, the tendencies and trends in the development of school health service may well determine the pattern of future medical practice, since the children of today will be the adult citizens of tomorrow, be it

"Resolved, that the House of Delegates request the Council to provide for the formation of a special committee or commission, representative of school physicians, private physicians and experts in health education, and charge this commission with the duty of studying further the school health program of this State and formulating, as promptly as possible, a practical program of action in answer to the following question

"What changes are needed in law and in administrative practice to place the school health service upon a sound, economic and professional basis, to equip the school physician for leadership in health education, to correlate the school health program with the educational program as a whole, and to correlate the school health service with the official health agencies and the medical profession in the community?"

your reference committee disapproves this resolution because there is already in existence a subcommittee of the Council Committee on Public Health and Education, which is called the Subcommittee on School Health Program, which is at present devoting itself solely to the study of these problems

Your committee recommends that this resolution be disapproved, and I so move

DR. LEO F. SCHIFF, *Clinton* I second that motion

SPEAKER BAUER You have before you the report of the reference committee, which recommends that the resolution be disapproved. The question is on the adoption of the committee report, which carries with it the loss of the resolution. Is there any discussion?

The question was called for, and the motion was put to a vote, and was carried

#### 44 Report of Reference Committee on New Business A—Establishment of a Session on Thoracic Diseases

##### (Section 17)

DR. LEO F. SIMPSON, *Monroe* On the resolution presented by Dr. John Donovan, of the Medical Society of the County of Erie, reading

"WHEREAS, during the past decade great advance has been made in the diagnosis and treatment of thoracic diseases, and

"WHEREAS, the profession at large is being deprived of the knowledge of this scientific achievement, and

"WHEREAS, the New York State Chapter of the American College of Chest Physicians at its annual session held in January 17, 1941, unanimously passed a resolution to petition the New York State Medical Society for the establishment of a session on thoracic disease at its annual meetings, therefore be it

"Resolved, that the House of Delegates establish a session on thoracic diseases, thus affording to the members of the State Medical So-

cety a greater opportunity for scientific and clinical knowledge regarding this very important branch of medicine,"

your reference committee recommends to the Committee on the Scientific Program that at the 1942 Meeting of the Medical Society of the State of New York, it consider the incorporation of a symposium on thoracic diseases. I so move, Mr. Speaker

The motion was seconded by several, and as there was no discussion, it was put to a vote, and was unanimously carried

#### 45 Report of Reference Committee on New Business A—Hospital Construction Federal Bill

##### (Section 32)

DR. LEO F. SIMPSON, *Monroe* On the resolution introduced by Dr. John L. Bauer, for the Medical Society of the County of New York, reading

"The Medical Society of the State of New York is informed that the Senate Committee on Education and Labor, of which Senator Mead is a member, has under consideration S 1230, the Hospital Construction Bill introduced by Senator Brown of Michigan. The Society, through its proper committee, has carefully studied the bill and wishes to file with Senator Mead certain objections to it in its present form

"1 It objects to the inclusion of an osteopath on the National Advisory Hospital Council. This designation seems unnecessary, for no hospital would be created for that form of treatment alone since it is only a specialized form of treatment, and if specific forms of treatment are to be recognized other cults may naturally seek designation

"2 The bill seems to provide that only projects constructed within the first year shall be supervised by the advisory council. Other projects conceivably will be constructed in later years and the advisory council's authority should be extended to cover these also

"3 The definition of the term 'hospital' in Section 18 is so worded as to permit of the construction, equipment and operation of health, diagnostic and treatment centers without specifying that there must be available bed capacity and every hospital should be equipped to provide diagnostic laboratory service and to provide treatment for ambulatory cases, but the government would be defeating its one purpose of spreading medical service if it engaged in constructing health centers where free diagnostic and treatment services would be obtainable. Private physicians not employed in the centers would be unable to compete with the government centers

"Realizing Senator Mead's interest in matters of this character, it is suggested that the House authorize that this communication be sent to him with the request that he give it careful consideration, and if a hearing is held on the bill, that it be spread upon its minutes,"

your reference committee recommends that this resolution be changed so that paragraph 1 be deleted of its last phrase and to read as follows

"It objects to the inclusion of an osteopath on the National Hospital Advisory Council

lected annually since the effective date of the new law with no indication that it is not considered a permanent tax, and

"WHEREAS, there are no provisions or, at best, inadequate provisions for the care of indigent physicians in New York State, he it

"Resolved, first, that the Nassau County Medical Society requests an accounting of the monies collected for annual re-registration since the effective date of the law with a statement as to how such monies were expended, and be it further

"Resolved, second, that a sum of money be set aside from this fund to be made available to the indigent physicians of the state, and he it further

"Resolved, that a portion of the annual re-registration be henceforth allocated for such purposes, and be it further

"Resolved, that the delegates of the Nassau County Medical Society be instructed to present these resolutions to the annual meeting of the House of Delegates of the Medical Society of the State of New York to be held at Buffalo starting April 28, 1911, with the request that the Medical Society of the State of New York sponsor and seek the introduction and passage of such legislation as might be necessary to make effective the purposes of these resolutions"

We recommend that this resolution be referred to the Legislative Committee of the State Society for study, that any recommendation which may be forthcoming from the study in that committee be referred back to Dr. Van Kleeck and the Nassau County Medical Society

I move its adoption, sir

DR. E. HARRISON ORMSBY, *Montgomery* I second the motion

SPEAKER BAUER You have heard the report of the reference committee which recommends disapproval of this resolution, and that the matter be referred to the Legislative Committee of the State Society. It is the opinion of the Chair that the recommendation should read that it be referred to the Council, which would naturally refer it to the Legislative Committee. If you will make that amendment, that it be referred back to the Council for further consideration, I will put the question

DR. BULL Yes, the reference committee will accept that

There being no discussion, the motion was put to a vote, and was unanimously carried.

DR. BULL Now, this report is signed by myself as chairman, Emily D. Barringer, *New York*, Kenneth F. Bott, *Greene*, Elmer H. Ormsby, *Montgomery*, and Stanley C. Pettit, *Richmond*. I move that the report be adopted as a whole

DR. KENNETH F. BOTT, *Greene* I second that motion.

There being no discussion, the motion was put to a vote, and was carried

#### 49 Report of Reference Committee on the Report of the Council—Part I—Postgraduate Education

DR. HARRY C. GUESS, *Erie* The reference committee on the Report of the Council consisted of the following: Oliver W. H. Mitchell, *Chairman*, *Syracuse*, George Baehr, *New York*, and Charles Dayton Post, *Syracuse*

The work of this committee has been most commendable

The cooperation of the State Health Department should be used to the fullest extent, and that the monies allocated by the State should be used at the discretion of the New York State Medical Society Committee. The courses chosen and the number of courses given have been excellent. The defense education is timely and should be augmented by the cooperation of this committee with committees from each county unit in establishing an industrial workers health committee. The part played by this committee in the maternal welfare work is commended, and the committee suggests a correlated report of all of the units in the State Society for publication in the JOURNAL. We believe that the funds expended will be returned manifold and that the postgraduate education will become a fixed asset in the Society.

We move the acceptance of this report, which is signed by myself as chairman, John J. Buettner, *Onondaga*, Irving Gray, *Kings*, and Bernard S. Strat, *Yales*

DR. JOHN J. BUETTNER, *Onondaga* I second that motion

There being no discussion, the motion was put to a vote, and was unanimously carried

#### 50 Acknowledgment of Flowers to the Dental Society of the State of New York

SECRETARY IRVING At the registration desk you have seen some very nice flowers. These were sent to the Medical Society of the State of New York by the Dental Society of the State of New York, and I would move you, Mr. Speaker, that the Secretary be instructed to thank the Dental Society of the State of New York for that very pleasant gift.

DR. WALTER P. ANDERTON, *New York* I second that motion

SPEAKER BAUER I am sure that needs no discussion.

The question was called for, and the motion was put to a vote, and carried amid applause

#### 51 Expression of Appreciation to Members and Officers of the Legislature, and to the Governor

DR. JOHN L. BAUER, *Kings* The Legislative Committee asks the House of Delegates to adopt an expression of appreciation to the members and officers of the Legislature, and especially to the Governor, for the courteous reception extended representatives of the medical profession and the thoughtful consideration they have given medical and public health measures that have come before them.

The motion was seconded by several.

SPEAKER BAUER I am sure it is not necessary to send that to the reference committee, and unless there is objection I will place it before you now.

The question was called for, and the motion was put to a vote, and was unanimously carried.

#### 52 District Branches—Constitution and Bylaws (Section 68)

DR. THEODORE WEST May I be granted the floor for a question of information?

SPEAKER BAUER Yes

DR. WEST In the last meeting of the House

**SPEAKER BAUER** You have heard the report of the chairman of the reference committee pertaining to the Basic Science Law. Is there any discussion?

**DR. THOMAS M. D'ANGELO, Queens** In recommending that the Basic Science Law be not approved, I would like to know on what grounds our committee disapproved the adoption of a Basic Science Law when the American Medical Association so heartily approves of the adoption of a Basic Science Law in the various states of the United States.

**SPEAKER BAUER** Would you care to answer that question, Dr. Bull?

**DR. BULL** I will ask Dr. Hambrook to answer that question, if he is in the House.

**SPEAKER BAUER** Dr. Hambrook, would you care to answer that question?

**DR. AUGUSTUS J. HAMBROOK, Rensselaer** I think this might be much better explained by Dr. Joseph Lawrence, who is very much interested in this matter. In order to save the members of this House a repetition, if Dr. Lawrence would come forward I believe he will be in a position to make a more satisfactory statement.

**SPEAKER BAUER** If there is no objection, the Chair will grant the privilege of the floor to Dr. Lawrence.

**EXECUTIVE OFFICER LAWRENCE** Mr. Chairman and Members of the House, in the first place New York State has a Basic Science Law. It is far in advance of any of the basic science laws that are adopted and in practice in other states. We require in this state one examination of all those who would practice medicine—the osteopath, the homeopath, and the regular physician. All take the same examination.

Those states that have basic science laws do two things. They split the examination. They require that the applicant for the privilege of practicing medicine shall take first an examination in usually six or eight subjects, anatomy, chemistry, and so on, with the stipulation that they shall take the examination in these subjects under a board of nonmedical men, that they shall be members of the faculty of a science school but must not or may not be medical men. Having passed that examination, then they are granted a certificate to the effect that they have completed that examination, and that they are on their way to full certification. Later they take another examination, and this examination includes the variations, that is, if they are going to be an osteopath, then they build to that and pass an examination including osteopathy, if they are going to be a chiropractor, then they pass an examination including chiropractic, if they are going to be a medical physician, then they take their examination under the medical board. Each takes the examination under his own separate board. The physician will take his examination under the medical board, the chiropractor will take his under the chiropractic board, the osteopath will take his under the osteopathic board.

Now what it would do in New York State is that it would reduce our medical standards because at the present time we require a higher standard, that is, the men must pass these subjects with a higher grade, they must pass them under medical men, and it is all one examination. There is no midway with the certificate. Such a certificate can readily be misconstrued. A per-

son who passes halfway can stop there and say he has a certificate, and it means that the law will have to be enforced more rigidly in order to catch him.

The American Medical Association does not recommend a basic science law for New York State. We have voluminous correspondence to that effect. But they did recommend that it would be something toward abolishing the chaos that had existed or had developed in certain states like Michigan. Those states have had considerable difficulty, and they introduced the basic science law as a first step toward coming to what we have in New York State now, hoping that they will eventually reach it. (Applause)

**SPEAKER BAUER** Does that answer your question, Dr. D'Angelo?

**DR. D'ANGELO** Not entirely.

**DR. CHARLES GULLO, Livingston** The remarks made by Dr. Lawrence are just about 90 per cent wrong. I don't think we should take much time on this now. I agree with the committee's report for just one reason, because I am agreed that the resolution as introduced last year by me for Livingston County had some loopholes in it, susceptible to the objections which were pointed out to me at the last meeting. However, Livingston County is prepared to introduce a new resolution at this meeting, and I hope to explain fully and establish definitely that the basic science law does not operate as Dr. Lawrence pointed out.

If Dr. D'Angelo does not mind, I wish he would withdraw his objection at this time.

**DR. D'ANGELO** Very well!

**SPEAKER BAUER** The question was on the adoption of the committee report. Will you read your final recommendation again, Dr. Bull, so the House will have clearly in mind what is before them for adoption?

**DR. BULL** We had no recommendation. We simply approved the report of the Council on the Basic Science Law as presented in the Annual Report, and I move the adoption of the report of the committee.

The question was called for, and the motion was put to a vote, and was carried.

#### 48 Report of Reference Committee on Report of Council—Part XI—Medical Practice Act, Annual Re-registration Fee

(Section 20)

**DR. HARRY S. BULL, Cayuga** The resolution introduced by Dr. Van Kleeck in behalf of the Nassau County Medical Society relative to the Medical Practice Act is disapproved by your committee.

This resolution reads as follows:

"WHEREAS, the Medical Practice Act of 1930 provides for the payment by every practicing physician of an annual re-registration fee of \$2, and

"WHEREAS, the medical profession was told at the time this law was proposed that the purpose of the fee is to provide the educational authorities of the state with funds with which to control the unlawful practice of medicine in the state with the implied or expressed promise that such fees were to be collected for a period of five years by which time the problem of the control of unlawful practice of medicine was expected to be solved, and

"WHEREAS, this annual fee has been col-

**SPEAKER BAUER** That resolution will be referred to the Reference Committee on New Business B, of which Dr DiNatale is chairman

Are there any further resolutions?

(There was no response)

**SPEAKER BAUER** The delegates' dinner this evening will take place in the Georgian Room, which is on the mezzanine floor. The time will be 6.30, and the price \$1.75, including tip. You will pay at the dinner, so every one who signified his intention of coming please be there at 6.30. We will have to have an evening session, so we will reconvene the House at eight o'clock.

Are there any reference committee chairmen ready to report?

(There was no response)

**SPEAKER BAUER** There are still a number of committee reports which we would like to have this afternoon, so I will declare a recess of ten minutes and ask you not to go very far so that we may reassemble in a short time.

(At this point there was a ten-minute recess.)

#### AFTER RECESS

**SPEAKER BAUER** The House will come to order.

The Chair recognizes Dr Schiff, Chairman of the Reference Committee on the Report of the Council, Part II, Public Health.

#### 55 Report of the Reference Committee on Report of the Council—Part II—Public Health Matters

**DR. LEO F SCHIFF, Clinton** Your reference committee finds that the Council Subcommittee on Public Health and Education has ably covered its assignments on public health matters.

**Maternal Welfare** The plans of the special committee on maternal welfare acting as a subcommittee of the Committee on Public Health and Education are outlined and the division of the State and the regions with the names of the regional chairmen are stated. Your reference committee recommends the approval of these actions. I move the adoption of this section of the report.

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried.

**Pneumonia Control.** **DR. SCHIFF** The activities of the committee in this regard are recommended for approval. We would, at this time, also commend the New York State Department of Health for arranging for the distribution of sulfapyridine and sulfathiazole in addition to specific sera for the treatment of pneumonia.

I move the adoption of this section of the report.

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried.

**4-H Clubs.** **DR. SCHIFF** Your committee notes the productive activities of Dr J G Fred Hiss, chairman of a one-man subcommittee on this work.

**Proposed Medical School in New York State.** Your reference committee recommends approval of the action of the Council in opposing the granting of a charter for a new medical school to be known as the "Gorgas Institute."

I move the adoption of this section of the report.

The motion was seconded, and as there

was no discussion, it was put to a vote, and was unanimously carried.

**Public Health Laboratories.** **DR. SCHIFF** We note that the Committee on Public Health and Education has secured a revision of the memorial presented last year by the New York State Association of Public Health Laboratories. This revision proposes an interchange of information between the directors of approved laboratories and the county medical societies, looking toward increasing the scope of usefulness of the laboratories by familiarizing physicians with the services available. This is to be supplemented by occasional conferences between representatives of the Medical Society of the State of New York and the State Laboratory of the New York State Association of Public Health Laboratories, also by the publication in the *JOURNAL* of pertinent items relative to laboratory facilities from time to time. We recommend the adoption of the principles stated in the proposal and the appropriate action thereon by county medical societies and laboratory directors throughout the State.

I move the adoption of this section of the report.

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried.

**Laboratory Medicine.** **DR. SCHIFF** We note that conferences have been had with representatives of various organizations relative to the resolution asked by the House of Delegates last year which recommended that work of State and City Department of Health Laboratories be limited to the diagnosis of communicable diseases except in cases where these laboratory facilities were the only diagnostic facilities available to indigent patients. This is a matter which will bring out much discussion among the individuals concerned, and it will take considerable time to iron out many differences of opinion that arise. We recommend that the Council committee continue conferences looking toward the practical adoption of the spirit of this resolution by the laboratories concerned.

I move the recommendation contained in this section of the report.

The motion was seconded, and as there was no discussion, it was put to a vote, and unanimously carried.

**Tuberculosis Conference Committee.** **DR. SCHIFF** The objective of this committee, inaugurated under the auspices of the State Department of Health with representatives from all interested agencies, official and otherwise, who might be interested, is the eventual eradication of tuberculosis from the State of New York. It is too early to expect any definite results, and we recommend that the Council committee continue its work on this problem with due thought for both the public health and the practitioners of medicine.

I move the adoption of the recommendation contained in this section of the report.

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried.

**Tattoo Code for the Serum Sensitive.** **DR. SCHIFF** This matter was discussed by Dr H D Vickers, of Little Falls, whose attention was first called to the importance of the subject by experience at the time of a train wreck in Little

of Delegates, Dr Burk's Committee on District Branches made this following recommendation (I quote from the JOURNAL of June 15, 1940, on page 959)

"Your Committee is informed that the activities of the district branches at present consist almost entirely of holding an annual meeting and the report of this event is prepared and submitted to the Secretary of the State Medical Society by the presidents of the district branches. The custom of having each county society elect delegates to district branch meetings should be revived. With the above preface your Committee recommends that the Council appoint a committee to draft a brief constitution and set of bylaws for adoption by the district branches with the approval of these district branches.

"The Committee recommends your approval, and I so move

"The motion was seconded "

I should like to ask what was done about this recommendation, if anything

SPEAKER BAUER I think I can answer that question, Dr West. If not, I will ask Dr Lawrence to correct me. My understanding is that the matter was taken up with the District Branches, but on account of the crowded nature of their programs nothing was done at their annual meetings, but Dr Lawrence plans to take that up at the annual executive committee meetings which will be held this spring.

Dr West The reason I bring it up now is that this is my last appearance as district president, which you will probably all be very glad to know, but this district branch proposition is to me a very important and dear item. I think the district branches can be integrated so they will be a very valuable part of the Society, and I did not want to see this thing dropped.

SPEAKER BAUER It has not been dropped, that I know. Am I correct in what I said, Dr Lawrence?

SECRETARY IRVING You are, sir.

SPEAKER BAUER I am quite certain I am right, but I will check it with Dr Lawrence when he comes back, and make a further announcement on it, Dr West.

If there are no other reference committee chairmen ready to make a report, the Chair will now receive resolutions.

### 53 Basic Science Law

(Section 84)

DR. CHARLES GULLO, *Livingston*. This resolution is submitted by the Medical Society of Livingston County.

"WHEREAS, there are people in the State of New York practicing the healing art without having adequate knowledge of the human body, and

"WHEREAS, experience has shown that it is most difficult and often futile to effectively prosecute these people even when they have violated the Medical Practice Act, and

"WHEREAS, it is the duty of Organized Medicine to promulgate medical information and prevent fraudulent and inferior medical service to our people, now therefore be it

"Resolved, that the House of Delegates of the New York State Medical Society hereby authorizes and directs the President of the

New York State Medical Society to present to the Legislature of the State of New York a suitable bill to correct this condition and that such bill shall provide substantially as follows

"Section 1 Definitions, as used in this Article

"The practice of the Healing Art is defined as follows: A person practices the healing art within the meaning of this article who holds himself out as being able to diagnose, treat, operate, or prescribe for any disease, pain, injury, deficiency, deformity, or physical condition of the human body, and who shall either offer or undertake by any means or method to diagnose, treat, operate or prescribe for any disease, pain, injury, deficiency, deformity or physical condition of the same.

"Section 2 Qualifications

"No person shall practice the healing art unless he shall first have complied with the following prerequisites

"First, he must pass an examination given by the Board of Regents in the basic sciences, namely, anatomy, physiology, chemistry, bacteriology and pathology, and upon passing such an examination shall receive a Certificate of Proficiency in the Basic Sciences which shall not confer the right to practice the healing art, and

"Second, after receiving said Certificate of Proficiency, he must pursue other studies as established by law and appear before the Board of Choice of the Board of Regents for further examination, and after having satisfactorily passed such examination, and having fulfilled other requirements prescribed by law, he may be licensed to practice

"Section 3 Penalty

"Any person violating any provision or provisions of the foregoing Sections shall be guilty of a misdemeanor punishable by law."

SPEAKER BAUER This resolution will be referred to the Reference Committee on New Business A, of which Dr Simpson is the Chairman.

### 54 Medical Relief—Ambulatory Care

(Section 78)

DR J LEWIS AMSTER, *Bronx*. Our delegates have been instructed by the Bronx County Medical Society to introduce the following resolution

"WHEREAS, the indigent of the City of New York as provided with medical care through a plan devised by the Medical and Nursing Service for Home Care, and

"WHEREAS, these same indigents require ambulatory care for which no provision is made, and

"WHEREAS, the physicians of the City of New York are supplying this ambulatory care without remuneration,

"Resolved, that the Bronx County Medical Society recommend that provisions be made for the ambulatory care of indigent patients in the office of the private practitioners and that the physicians be adequately remunerated for this care, and he it further

"Resolved, that these resolutions be introduced at the House of Delegates at the meeting of the New York State Medical Society in April, 1941."

Treasurer (Section 10) DR KLEIN To acquire an intelligent understanding of the report of the Treasurer, a thorough study must be made of the accountant's figures, the report of the Publication Committee, and, above all, the supplementary report of your Treasurer

The accountant's figures show a surplus of income over outlay of nearly \$19,000 These figures are meaningless unless we know the details and comparative figures The past year's activities and various changes have been extraordinary and necessitated expenditures that should not recur in the near future The moving of the office, the rearrangement of the inner workings and business procedures, new methods of accounting and the Publication Committee workings have necessitated an outlay that may be considered as establishing almost what amounts to a new business These matters have incurred expenditures that must not be regarded as such, but should be considered as outlays that spread over a number of years

Viewing the report in this respect, we are glad to see that much progress has been made toward better business methods resulting in far better methods of conducting the affairs of the Society

With these rearrangements, anyone interested can see a bi-monthly exact account of the financial standing of the Society

The future, while unpredictable, must be viewed with anxiety As pointed out by your Treasurer, many men will be called to service and dues will shrink to a point not estimable at present Your Treasurer appears much worried as to the way it will affect our financial condition Your committee feels that while our treasury may not be able to show a surplus in the next year, the probabilities are that the net result will not affect us much We, as well as the rest of the country, may have to forego certain desired improvements We make this point simply because in our opinion to curtail the activities when we finally have them working well would be poor economy We particularly feel that with the present setup in the Publication Committee, and with Mr Anderson's splendid work, not one iota of curtailment should be instituted at this time Your Treasurer, in his supplementary report, proposes certain recommendations

1 At his request the House of Delegates proposed an amendment to the Constitution to empower the appointment of a second assistant treasurer His suggestion that this be not acted upon this year is approved by your committee

I move the approval of this recommendation.

I understand, however, that this constitutional amendment has already been withdrawn.

SPEAKER BAUER Yes, that has been withdrawn.

DR. KLEIN So it will not be necessary to vote on that again.

SPEAKER BAUER No, it has been withdrawn.

DR. KLEIN On his second recommendation, in view of the excellent work that resulted from last year's Committees on Office Administration and Policies, and Publication, they should be continued. It is advisable that these committees be composed of local members whose services can be had at short notice His recommendation that a separate member of the Board of Trustees be a member of each of these two committees is advisable

Your committee moves the approval of this recommendation

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried

DR. KLEIN As to his third recommendation, your Treasurer proposes the creation of a *Library Fund* Your committee thinks that the proposal is not well defined, and begs to submit the same resolution in the following form

"The creation of a fund for a library in order to facilitate the work of the Publications Committee Appropriate funds should be budgeted"

I move the adoption of this part of the report

The motion was seconded.

SPEAKER BAUER You have heard the recommendation of the chairman of the reference committee, which substitutes a recommendation on the question of a library Is there any discussion?

DR. GEORGE W. KOSMAK, *New York* May I expand on that for a minute? I feel, perhaps, the reference committee did not quite understand my recommendation I believe that this recommendation should be given more study, and my recommendation was that we refer it to the Council for further study If that would be agreeable to the reference committee I think that should be substituted.

DR. KLEIN That is agreeable

DR. KOSMAK I think this should be given more thought and study before any final decision is arrived at as to how to accomplish these ends

SPEAKER BAUER I understand then, Dr. Klein, you withdraw that recommendation and substitute that the matter be referred to the Council for study

DR. KLEIN The recommendation should read

"The creation of a fund for a library in order to facilitate the work of the Publications Committee should be referred to the Council for study and action."

Is that agreeable?

DR. KOSMAK Yes

SPEAKER BAUER The recommendation of the reference committee is amended so that the matter is referred to the Council for study Is there any further discussion on it?

DR. THOMAS A. MCGOLDRICK, *Kings* Was there a descriptive phrase as to the kind of library that was suggested?

DR. KLEIN Yes

DR. MCGOLDRICK May I have it read?

DR. KLEIN There was no descriptive phrase in the recommendation, but it meant a reference library to facilitate the work of the Publication Committee, such as interchangeable literature, magazines, etc

DR. MCGOLDRICK I should like it to read "reference library"

DR. KOSMAK It so read in the original recommendation made in my report as Treasurer

DR. KLEIN That is agreeable

SPEAKER BAUER "Reference library" is inserted in the recommendation.

DR. KLEIN Yes

The question was called for, and the motion was put to a vote, and was unanimously carried.

DR. KLEIN As to the fourth recommendation of the Treasurer, your reference committee feels

Falls in April, 1940 Several of the patients were brought in unconscious In making tests to determine serum sensitivity before administering tetanus antitoxin, two of these patients were found sensitive It was thought that it might be useful to establish a practice of putting a tattoo on the bodies of such people so that serum-sensitive cases would be recognized easily, perhaps save life in some instances where the urgency might seem so great that serum would be administered without a preliminary test This idea could be elaborated on to include other important conditions, particularly diabetes

The Council committee did not approve such a code on the ground that it would not be readily accepted, could not be made compulsory, and might be subject to improper use The Council did advocate identification by cards or tags

Your reference committee feels that this is a matter of more than state-wide importance and should be referred to the American Medical Association for study Even though it cannot be made compulsory, the establishment of a definite authoritative universal code for identification of these types of patients when unconscious would be highly useful Naturally, it will depend upon each individual concerned as to how far he may choose to go in having such identification. Some will be quite willing to have permanent tattoo, while others may wish to carry a tag, and some others neglect or refuse to do anything about it These attitudes do not constitute a valid objection to the plan as a whole We, therefore, recommend that the Council of this Society be instructed to draw up a resolution to be presented to the American Medical Association at its meeting in June of this year, requesting the American Medical Association to appoint a committee to study this question and take suitable action thereon

I move the adoption of this recommendation contained in this section of the report

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried

**Demolition of Manhattan State Hospital.** DR. SCHIFF Your reference committee approves the action of the Council in opposing demolition of the Manhattan State Hospital and reference of the matter for further study to the Committees on Public Health and Education and Public Relations and Economics for study and report

I move the adoption of this section of the report

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried.

DR. SCHIFF Dr. Mitchell, Chairman of the Council Committee on Public Health and Education, presented two matters which had not come up in time for inclusion in the official report

**Industrial Health Program** One of the two matters was in regard to industrial health. Since this had to do mostly with graduate education on the subject of industrial health, it was suggested that Dr. Mitchell report on the subject to the Reference Committee on Part I of Report of Council (Postgraduate Education) The topic is in the early stages of discussion and requires further study, best by a special committee to be set up by the Council as a subcommittee of the Committee on Public Health and Education

**SPEAKER BAUER** Do you wish to move that as a recommendation?

DR. SCHIFF No, I don't Unless the other committee fails to make a recommendation on it, we feel we should not go that far

**Rheumatic Fever Program.** In conjunction with the State Department of Health and with a setup including representatives of all interested organizations, similar to that of the Pneumonia Control Program, it is proposed to institute a Rheumatic Fever Program This program would include education, both lay and graduate medical, hospitalization including arrangements for a long convalescent period, study and possibly demonstration setups It is too early to make any more definite statements as to the program It is probable that most of the funds needed at the beginning of the program, at least, can be secured through the State Department of Health and interested private organizations We recommend that the Council Committee on Public Health and Education continue its work on the rheumatic fever program I move the adoption of this recommendation

The motion was seconded, and as there was no discussion, the motion was put to a vote and was unanimously carried.

DR. SCHIFF In conclusion, we desire to voice the thought that the Committee on Public Health and Education has been able to accomplish a great deal with the funds at its disposal, and to second the hope expressed by our retiring President in his address this morning that more funds may be made available to this important committee in the ensuing year

Mr Speaker, I move the adoption of the report as a whole

The motion was seconded, and as there was no discussion, the motion was put to a vote, and was unanimously carried

**SPEAKER BAUER** The report is adopted Thank you, Dr Schiff!

## 56 Report of Reference Committee on the Reports of the Board of Trustees, Treasurer, and Council—Part XII

**Board of Trustees—DR. WILLIAM KLEIN, Bronx** Your reference committee, having studied the report of the Board of Trustees, begs to make the following comment

The Trustees have carried out the recommendations and contemplated changes in the disbursement of the Society's funds These reflect definite improvement in the management They have kept within the budgetary allocations The moving of the office and other more modern arrangements of the business part of our organization necessitated expenditures of additional funds that were not in the budget

In view of the marked improvement resulting from these changes, your committee believes that it was sound practice

The concentration of liquid currency is most commendable, as in these times not much can be expected from investments in the open market while government securities yield very little

Your committee moves the approval of the report of the Board of Trustees as printed in the JOURNAL.

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried

DR. HARRY ARANOW, *Bronx* I hope that the Council has as much feeling as the County Society, and I am sure that unless there is a definite reason to the contrary such request for the remission of dues will not be denied

DR. THOMAS A MCGOLDRICK, *Kings* Every man taken into service does not relinquish immediately his private practice nor the income from his profession. There are many men in Greater New York who are assigned to duty at offices in New York or on Staten Island and who give a few hours a day on the week days to that work, for which they receive a good salary, and who continue their practice in the remaining hours of the day

There are many such cases, and it seems to me that the State Society should not give over its authority and power altogether even to the County Society. The County Society will make its recommendation and will give its reasons, and then the Council should have the authority to agree or disagree in the relinquishment of dues to the State Society. I think the term "may" is for the benefit of the Society and for the men themselves

SPEAKER BAUER Is there any other discussion on the amendment?

DR. WALTER P ANDERTON, *New York* As a member of Dr Klein's committee, I feel that this resolution was recommended by the Council, and was carefully studied by the committee, and so deserves the support of this House

The question on the motion as amended was called for, and the amended motion was put to a vote, and was lost

SPEAKER BAUER The amendment is lost. You have now before you the original motion which is that at the request of any component county medical society the annual assessment on any of its members temporarily on active duty in the military or naval service of the United States may be remitted by the Council in full or in part during the period of such service

The question on the original motion was called for, and the motion was put to a vote, and was carried

SPEAKER BAUER The resolution is adopted

DR. KLEIN I move the adoption of the report of the reference committee as a whole

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried.

SPEAKER BAUER The report as a whole is adopted. Thank you, Dr Klein!

DR. SAMUEL J KOPETZKY, *New York* Is it in order to present a resolution at this time?

SPEAKER BAUER Yes

## 57 Health Programs in National Defense (Section 80)

DR. SAMUEL J KOPETZKY, *New York* This morning, gentlemen, I outlined a yardstick for policy. I now am presenting a resolution that would integrate this into actual practice

"WHEREAS, from many quarters measures which involve medical care of the public are being proposed in the interest and under the banner of the National Defense Program, and

"WHEREAS, the Medical Society of the State of New York heartily favors the National Defense Program and has placed all its facilities at the disposition of the governments, state and

Federal, in the furtherance of this Defense Program, and

"WHEREAS, it is a matter of fixed policy of the Medical Society of the State of New York to safeguard the modes of medical practice which have given the communities of this State its present high level of health as an outstanding medical achievement, involving as it does preventive, curative and public health medical measures, therefore be it

"Resolved that each and every proposition which is advanced from any quarter whatsoever which would integrate a medical service to the community shall be studied as to its adoption into the emergency program with every necessary protection as to its discontinuance when the present emergency shall have passed, and which shall be written into its procedures, and be it further

"Resolved, that it is the expressed policy of the Medical Society of the State of New York that at their introduction the temporary nature of necessary health measures be stressed as they are developed and that no general program shall be approved coming under the terms 'of part of the Defense Program' which permanently would change the nature and mode of the present method of medical practice"

SPEAKER BAUER That resolution will be referred to the Committee on New Business "C," the reference committee of which Dr Masterson is chairman

## 58 Report of the Reference Committee on the Report of the Council—Part IX—Workmen's Compensation

DR. COBURN A L CAMPBELL, *Suffolk* We heartily endorse the active interest of the Committee on Workmen's Compensation in all phases of the Workmen's Compensation Law affecting medical practice in this state. We have carefully studied their report, which again stimulates us to realize the tremendous volume of work which is covered by the Workmen's Compensation Bureau

We note the committee's report on arbitration and again call attention to the small percentage of cases going to arbitration and the fairness of arbitration. We call attention to their reminder that, owing to the increase in employment in 1941, we will have a larger number of compensation accidents. Your committee approves that an effort should be made to modify Section 13-g (2) to remove the necessity of the Medical Society arbitrating hospital bills

I so move.

DR. CHARLES L POPE, *Broome* I second the motion.

SPEAKER BAUER You have before you the recommendation of the reference committee recommending that an effort be made to modify Section 13-g (2) of the Workmen's Compensation Law. Is there any discussion?

The question was called for, and the motion was put to a vote, and was unanimously carried

DR. CAMPBELL Your reference committee agrees with the report that there should be a revision of the Statute Subsection 13-g to include a sentence to enforce payment of "bills not objected to," without the necessity of court action, and also an amendment to Section 13-g (2) whereby disputes with regard to the payment of a bill,

that the appointment of a committee to study the question of a *Benevolence Fund* is desirable

Your reference committee moves the approval of the appointment of such a committee

It seems that other states have adopted sort of a Benevolence Fund for various purposes, which we need not go into now While we do not feel that large expenditures can be made at this time in that direction, your reference committee feels that such a committee should be appointed for the purpose of studying the question of benevolence as practiced by other state societies

The motion was seconded

**SPEAKER BAUER** Approval is requested for the appointment of a committee to study the matter of a benevolence fund for the State Society Is there any discussion on that recommendation?

**DR. WALTER D LUDLUM, Kings** In accordance with analogy, as we decided some years ago, and as we have up to now continued that practice, that the appointment of such committees would lie with the Council, if the reference committee would accept the suggestion I would suggest that the Council be asked to consider this matter with such committee as it sees fit to appoint

**SPEAKER BAUER** Your point is well taken All committees except those that function during the sessions of the House must be appointed by the President with the consent of the Council

**DR. LUDLUM** And the report of the reference committee especially called for a special committee

**DR. KOSMAK** May I say again that that was the wording in my report Evidently it escaped the notice of the reference committee that I asked that it be referred to the Council for study

**SPEAKER BAUER** You recommended that it be referred to the Council for study?

**DR. KOSMAK** Yes

**SPEAKER BAUER** Does the reference committee accept that amendment?

**DR. KLEIN** Yes We will change it to make it that the matter of a Benevolence Fund will now be referred to the Council for study

There being no further discussion, the motion was put to a vote, and was unanimously carried

**Remission of Dues of Members in Active Military and Naval Service (Section 18)** **DR. KLEIN** As to the resolution introduced by the Erie County Medical Society reading

"WHEREAS, the induction of physicians into military service removes them from their practice, and

"WHEREAS, this results in a great sacrifice to the said physician both personally and financially, therefore be it

"Resolved, that the Medical Society of the County of Erie go on record as favoring the waiving of both county and state dues of said physician while in active military service, this resolution having been discussed and adopted at the stated meeting of the Medical Society of the County of Erie held February 17, 1941, be it further

"Resolved, that the Medical Society of the County of Erie beg the Medical Society of the State of New York to take such action"

this resolution is covered by the report of the Council, Part XII, which reads as follows

"Be it resolved by the House of Delegates of

the Medical Society of the State of New York assembled in annual meeting at Buffalo, New York, on April 28, 1941, that the annual per capita assessment on members of the component county medical societies shall remain as at present, namely, ten dollars per annum"

I move the adoption of that part of the resolution

The motion was seconded, and as there was no discussion, the motion was put to a vote and was unanimously carried

**DR. KLEIN** Continuing the resolution

"Be it further resolved that, on the request of any component county medical society, the annual assessment of any of its members temporarily on active duty in the military or naval service of the United States may be remitted by the Council in full or in part during the period of such service"

I move the approval of this part of the report of the Council, covering the second part of this resolution

The motion was seconded

**SPEAKER BAUER** It has been moved and seconded that this part of the resolution pertaining to the remission of dues of members in military service be adopted. Is there any discussion on it?

**DR. ALFRED M. HELLMAN, New York** I should like to move to amend so that the word "may" be changed to "shall" I think that allows powers to somebody to do it or not to do it, and I don't think that was meant

The amendment was seconded

**SPEAKER BAUER** It has been regularly moved and seconded that the motion be amended to substitute the word "shall" for "may," so that it will read, "shall be remitted by the Council in full or in part," etc

**DR. WALTER D LUDLUM, Kings** I would assume, not having had anything to do with this before, that the word "may" was put in deliberately, in order that the Council may investigate each individual case and determine whether that case deserves remission or not Therefore, the amendment should not prevail

**SPEAKER BAUER** Is there any further discussion on the amendment?

**DR. HELLMAN** I have not any doubt it was put there purposely That is the reason I object to it If a man is in service, I don't think he should have any investigation made into his affairs If he is in the service that should finish the investigation, and he should have the right to have his dues remitted

**DR. LUDLUM** May I respond to that because that is the exact point I wish to make. How is it going to be determined that he is in service if he is not investigated? I don't mean any improper investigation should be made, but he should not have his dues remitted merely because he says he is in service That is not all there is to it You have to know the time of induction and all those details, so an investigation should be made, but it should be made as simple as possible If you put the word "shall" in, you will have to put in many qualifying clauses, such as, after proper investigation by a proper committee, who has determined that he has been inducted properly, and so on and so forth

**DR. JOSEPH WRANA, Queens** Your County Medical Society makes the request and can perform that function.

I think you should know something about this report. Dr Driscoll, of Richmond, was originally designated as chairman of this committee. At the last moment he had to withdraw as chairman, and Dr Campbell had to fill in at very short notice. I think he deserves a great deal of credit for the excellent way in which he presented this report.

#### 59 Announcement of Death of Dr Arthur S Driscoll, of Richmond

**SPEAKER BAUER** Now, gentlemen, I have a very sad announcement to make. I just spoke about Dr Driscoll. As you may know, Dr Driscoll was taken seriously ill. He had been ill for some time, but he had a stroke on Friday, and I am sorry to announce to the House that he died last night. I feel that the House should take some notice of his death at this time. He was long a member of this House of Delegates and in 1937 and 1938 was second vice-president of the Society. I am going to ask the House to rise for a moment in Dr Driscoll's memory.

The House arose and stood for a minute with bowed heads in Dr Driscoll's memory.

#### 60 Report of Reference Committee on New Business C—Medical Preparedness—Foreign Service of American Physicians

(Section 25)

**DR JOHN L MASTERSON, Kings** On the resolution presented by Dr L D Redway, of Westchester, reading

"WHEREAS, the President of the United States, on April 17, 1941, has, as President of the American Red Cross, endorsed the appeal of the British Red Cross for one thousand young American physicians, and

"WHEREAS, the American Medical Association, in an editorial in the *Journal of the A.M.A.* has 'assured Britain of every possible assistance,' and has supplied the Red Cross with lists of eligible young doctors, thereby endorsing the principle that American physicians be encouraged to volunteer for foreign service, and

"WHEREAS, of the 5,000 annual graduates of American medical schools only 3,000 or 60 per cent are physically acceptable for military service and available to meet the demands of an expanding military establishment, thereby necessitating substantial requisitions from the ranks of those now in private practice in addition to depriving the civil population of 50 per cent of the new graduates, and

"WHEREAS, the maintenance of those standards of military and civil health made possible by the thorough education and training of the American Physician and now demanded by the people of the United States, is vital to the defense of the nation and the welfare of its population, therefore be it

"Resolved, that the Medical Society of the State of New York instruct its delegates to the A.M.A. to propose by resolution or otherwise, that the American Medical Association immediately state its policy with respect to further depletions of the reservoir of available young American physicians in the event of further requisitions of volunteer medical personnel emanating from a foreign source,"

your reference committee approves of this resolution and recommends its adoption

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried.

#### 61 Report of Reference Committee on New Business C—Advertising in Newspapers by Physicians

(Section 30)

**DR JOHN J MASTERSON, Kings** On the resolution presented by Dr Samuel M Kaufman, of New York County, reading

"WHEREAS, Governor Lehman recently signed the Milmoce Bill which limits drastically commercial displays and flagrant advertising by licensed podiatrists in the State of New York, and

"WHEREAS, the dental profession previously succeeded in bringing about legislative enactment which reduced advertising abuses in the dental profession, therefore be it

"Resolved, that the House of Delegates of the Medical Society of the State of New York go on record as disapproving all advertising in newspapers by practicing licensed physicians of the State of New York, individually or in groups, in the form of announcing their office address, office hours, kind of practice or particular cure to the public, and further be it

"Resolved, that the House of Delegates instruct the Committee on Legislation of the New York State Medical Society to take any necessary action to amend the present law to this effect,"

your reference committee approves of this resolution and recommends its adoption. I so move.

**DR G SCOTT TOWNE, Saratoga** I second the motion.

**SPEAKER BAUER** You have before you the report of the reference committee, which carries with it the adoption of the resolution. Is there any discussion?

**DR HARRY ARANOW, Bronx** I had an idea that such a provision was passed a long time ago. I thought such advertising was contrary to medical ethics.

**SECRETARY IRVING** I think you are right.

**DR SAMUEL M KAUFMAN, New York** This resolution was introduced by me two years ago. It is true that such advertising was declared unethical, but it is not unlawful. Therefore, a man who does not belong to the State Society can advertise, whereas with this enacted we could get hold of them whether they are members of the Medical Society or not.

**DR MASTERSON** This would affect all physicians if such a law were passed, whether they are members of the county societies or not.

**DR ARANOW** I doubt if you will get such a law through the Legislature. The Legislative Committee of the State Society has been endeavoring to get such a bill passed year after year, and has thus far been unsuccessful.

The question was called for, and the motion was put to a vote, and was unanimously adopted.

#### 62 Report of Reference Committee on New Business C—Deferment of Medical Students

(Section 31)

**DR JOHN J MASTERSON, Kings** On the resolution introduced by Dr M E Marsland, of Westchester, reading

because of alleged failure of a physician to obtain authorization, should be arbitrated

I move the adoption of this part of the committee's report

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried

DR CAMPBELL Attention is called to the County Societies to continue to stress the importance of filing necessary reports under the law effective July 1, 1940, also to note that care must be exercised by attending physicians in calling consultants and ordering x-rays, in old protracted cases, also the necessity to request authorization for special treatments

I move the adoption of this part of the committee's report

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried.

DR. CAMPBELL We agree with the strong recommendation by the Director of the Workmen's Compensation Bureau of the State Society that there be no change in Rule No 7, which gives the employer or carrier five working days in which to respond to the request for authorization under Section 13-a (5)

I so move

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried

DR. CAMPBELL Your committee calls attention to the recommendation that County Societies simplify the symbols given to practitioners under the Workmen's Compensation Law Also, that before a compensation board refuses to qualify a physician, he be given a *personal* hearing before the board or committee, and that, in case of rejection of either an original application or request for a revision of rating, minutes of the board or committee be recorded and a copy be sent to the Director of Bureau of Workmen's Compensation, Department of Labor Also, the committee strongly advises the setting up of a qualifying committee wherever possible to serve in an advisory capacity to the Workmen's Compensation Committee or Board

I move the adoption of this portion of the committee's report

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried

DR CAMPBELL We endorse the recommendation that the County Society Compensation Committee or Board keep in contact with the licensed medical bureaus and ascertain that they are maintaining proper equipment and complying with the provisions of law, *especially in regard to reporting cases and free choice of physician*, also that revision of the rules governing medical bureaus be made, in order to improve the quality of medical care rendered to workmen.

We also agree that rules and regulations be set up by the Department of Labor to cover first-aid bureaus

I move the adoption of this portion of the report

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried

DR. CAMPBELL We note that the Medical Society Bureau has been, and is always, ready to give aid in the settling of bills and in other mat-

ters, and it is strongly recommended that the Bureau be consulted in the first instance in all compensation matters rather than the Labor Department

We observe that reports from the Labor Department, after hearings and examinations, will become available to local county societies. We believe that this is a step in the right direction and will facilitate the handling of protracted cases

Your reference committee approves of the Director's efforts and the results he obtained in his various appearances before the Industrial Board in regard to "*Fees for Testimony*" and the payment of x-rays ordered by the referee, also in the payment of bills where no time was lost We note that the Director's plan in reference to the Industrial Dermatoses is still under advisement by the insurance carriers, and will if accepted be submitted to the Industrial Commissioner, Board, and Council for approval. This is an important matter and will be of great value to physicians

I move the adoption of this part of the report.

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried.

DR. CAMPBELL The report calls attention to the new schedule of fees for x-rays of multiple injuries or parts, also to proposed amendments to the Workmen's Compensation Law

We endorse the recommendation that any and all attempts to permit partially trained and unlicensed practitioners to practice under the Workmen's Compensation Law be combated.

I so move

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried

DR CAMPBELL Attention is called to the arrangement of the supplying of reporting forms by the Labor Department to the County Medical Societies Physicians are requested to apply to the County Medical Societies and not to the Labor Department

The tremendous volume of the activities of the Bureau is shown in the report by a brief summary of a typical month's activities

The House of Delegates last year recommended to the Council the consideration of employment of a Director of Workmen's Compensation on a full-time basis The matter was referred to the Council

While the importance of the work of the Bureau and its effect on medical practice justifies the continuance of the Bureau, the question of full or part-time employment at this time is referred to the Council for further study

We commend the excellent efficiency of the Director of the Bureau and hereby tender our appreciation of his work for the Society

I move the adoption of this portion of the report

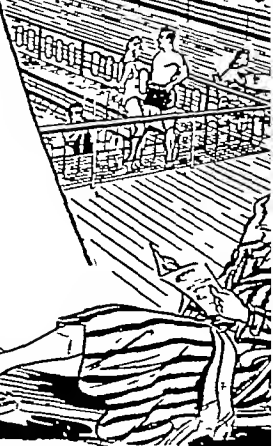
The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried.

DR. CAMPBELL I now move the adoption of the report of the committee as a whole

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried.

SPEAKER BAUER The report is adopted as a whole Thank you, Dr Campbell!

Dear Doctor  
 Why don't you  
 follow the advice you  
 so often give others?  
 It would do you a  
 world of good, and



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"WHEREAS, the experience of belligerent nations in the World War and in the present conflict amply demonstrates the necessity for insuring a continuing supply of well-trained medical graduates, and

"WHEREAS, the United States Army in 1917-18 permitted medical students on active service to be transferred to the Reserve for the purpose of completing their medical course, on application to and approval by the Surgeon General, therefore be it

"Resolved, that the Medical Society of the State of New York instruct its delegates to the American Medical Association to introduce a resolution, memorializing the Surgeon-General to give consideration to similar action with respect to medical students inducted into active service in the present emergency."

your reference committee approves of this resolution and recommends its adoption I so move

DR G SCOTT TOWNE, *Saratoga* I second that motion

SPEAKER BAUER You have before you the adoption of the Report of the Reference Committee which carries with it the approval of the resolution Is there any discussion?

DR THOMAS A. MCGOLDRICK, *Kings* For information, has the Surgeon-General the authority under the Selective Service Act to give any such order at the present time? Does that not come under Mr Dykstra, who is in charge of the administration of that act? I feel very confident that is so, and to make sure in any case I would like to amend that so his name and office be also inserted in that resolution, as well as the Surgeon General's

SPEAKER BAUER I might say for information that the Surgeon General would have no authority at all It would be the General Staff and the Adjutant General The Surgeon General could only recommend

DR. MCGOLDRICK To the Administrator of the Selective Service Law?

SPEAKER BAUER Yes

DR MCGOLDRICK I would like to amend that so that the resolution be also addressed to the Chief Administrator of the Selective Service Law

The amendment was seconded by several

SPEAKER BAUER The amendment has been proposed to include the Administrator of the Selective Service Act in the resolution Is there any objection to that amendment?

DR CHAS GORDON HEYD, *New York* I think Dr McGoldrick is out of order The resolution states after he is inducted into active service which is the Army

SPEAKER BAUER Will you read that section again, Dr Masterson, in order to clarify it?

DR MASTERSON I will read the last paragraph I think that is all that is necessary

"Be it resolved that the Medical Society of the State of New York instruct its delegates to the American Medical Association to introduce a resolution, memorializing the Surgeon-General to give consideration to similar action with respect to medical students inducted into active service in the present emergency"

This only applies to medical students who have been inducted I understand from Dr Marsland, who appeared before our committee that he was

a medical student at the time of the last World War in the National Guard He and five other young men who were medical students were inducted into service, and they were there a short time when they were notified by the Attorney General to go back to school and continue their studies The object of this resolution, as I understand it, is that if any such similar instances have taken place at the present time, such men be given the same consideration they were given during the World War

SPEAKER BAUER I think that Dr Heyd's point is well taken, and the amendment is out of order, so it will stand as originally read Is there any discussion further?

The question was called for, and the motion was put to a vote, and was unanimously carried

### 63 Report of Reference Committee on New Business C—Deferment of Medical Students

(Section 16)

DR. JOHN J. MASTERSON, *Kings* The resolution, as introduced by Dr John Donovan, of the Medical Society of Erie, pertaining to the deferment of medical students, reads

"WHEREAS, medical men are necessary for the proper functioning of the Army and for the care of civilian population, and especially so during an emergency, and

"WHEREAS, the drafting of medical students would interfere with the normal training and graduation, as many of them would not return for the completion of the study of medicine when the course has been interrupted for one or more years, therefore be it

"Resolved, that the Medical Society of the County of Erie go on record against the drafting of medical students and also instruct its delegates to implore the Medical Society of the State of New York to do everything in its power to allow the deferment by Selective Service Boards of medical students, thereby permitting them to complete their medical education, and be it further

"Resolved, that the Medical Society of the State of New York send letters to various Draft and Appeals Boards appraising them of the gravity of the situation"

Your reference committee approves the resolution in principle, but not the verbiage, and does not desire to recommend a blanket deferment for medical students or enrolled medical students as it is contrary to the spirit of the Selective Training and Service Act

The Selective Service Law and the policy expressed by the National Selective Service declares that a student pursuing a course of study by which he is preparing himself for an occupation which is "essential to the health, safety or interest of the nation" may be deferred under the regulation

The committee holds that a student during the course of his medical education is in the category Furthermore a student who has successfully completed his premedical course and has been enrolled as a student in a College of Medicine of approved standing is likewise a necessary man who should be deferred.

The committee therefore moves the adoption of the resolution in principle and also moves the

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[Continued from page 1302]

adoption of our herein expressed opinion, as interpreting the resolution

Furthermore we recommend that a copy of this resolution be sent to the American Medical Association for its information and action, the first "Resolved" clause to include "and of students who have been enrolled," after the words "medical students"

## AN ODE

(Owed to our Doctors—the Examining Physicians)

(This poem was written by Denis H O'Brien, Clerk of Local Board No 2, Yellowstone County, with apologies to "Kipling" and dedicated to the striving doctors, clerks and stenos in that county)

You make talk of words and phrases  
And of questions that it raises  
When our doctors send their Forms "Two  
Hundred" in,  
And it certainly is slaughter  
When they don't write like they aught'er,  
It's their scribbled hieroglyphics, that's a sin  
Now the words I try to type  
Make me wish for something ripe  
For to throw, to show my vengeance mud my  
tears

Now of all that learned crew  
There was none wrote words I knew,  
It's unveiling of his secrets—Doctor fears  
So it's scan—scan—scan,  
With the wrinkles growing deeper on my  
pan

What's the use, what should I die for  
If those words, you can't decipher,  
You're no better man than I am, Doctor-man

Now your "P" and "D" and "B"  
They are all alike to me  
And your "S"es look like "M" or "X" or "L,"  
And I wouldn't feel the sadder

I so move

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried

SPEAKER BAUER It is nearly 5 50, and as we are to have dinner in the Georgian Room at 6 30 we will now take a recess until 8 o'clock, tonight Please be here promptly

The session recessed at 5 50 P M

And I wouldn't be much madder  
If in Wong Sun's native language you would spell  
All the aches and pains and troubles,  
To my brain, are empty bubbles,  
Cause they could mean mostly anything at all  
How I wish that I'd seen college  
And had gained tremendous knowledge  
Like you, dear Doctor, from some noted Hall

But it's scan—scan—scan,  
With the wrinkles growing deeper on my  
pan  
What's the use, what should I die for  
If those words, you can't decipher,  
You're no better man than I am, Doctor-man  
As I finished with this verse,  
I could think of nothing worse  
Than to take it to the doctor and insult him,  
So I walked right to his door  
And I bravely crossed his floor  
As if I called upon him to consult him  
Then I handed him this script  
And I said, "You must have skipped  
Every class you had in penmanship and writing"  
In reply he simply said  
"It's your ignorance, instead,  
You've never learned to read, so stop your  
fighting"

So it's scan—scan—scan,  
Perspiring, working, slaving all I can  
Now I've razed you and I've flayed you  
By the living gawds that made you  
You're a better man than I am, Doctor-man

## AMERICANS OF 1840 COULD DRINK A QUART OF WHISKEY A DAY

The American of 1840 could drink nearly a quart of whiskey (29 ounces) every day and still keep his health and live to a good old age, but the average American of today cannot, Dr Norman Jolliffe, of New York University, told the American Association for the Advancement of Science as reported in the *Science News Letter*

The immunity of our great grandfathers to the diseases of alcohol was due to their superior intake of vitamin B, Dr Jolliffe explained. The vitamin deficiency that scientific study has recently demonstrated to be the real basis of the so-called alcoholic diseases is due not so much to an absolute lack of vitamin B, as it is to a vitamin intake which is too low in proportion to the calories. Increasing the calories consumed by experimental animals that are getting too little vitamin B, only increases their liability to deficiency disease. Those that eat too few calories are safest

The average American of drinking age today consumes more than 200 calories every day just

from his alcohol in addition to the nonalcoholic calories in his drink and the calories in his food. This extra 200 calories cuts the important ratio between vitamin B<sub>1</sub> and calories from the alcohol-free 3 32 to 3 13. This means an 18 2 per cent reduction in the already slim margin of safety for this vitamin.

The average American of 1840 had a ratio of 7 2 and a margin of safety of 230 per cent

It is a mistake, Dr Jolliffe emphasized, to assume from the recent demonstration of the part of vitamin B deficiency in alcoholic diseases that alcohol itself is harmless—a mistake made by those opposed to drinking as well as those who like it. Although these diseases do unquestionably develop as a direct result of nutritional deficiency, he said, it is the consumption of too much alcohol and too little food that is responsible for the nutritional lack.

The alcohol acts in still another way to cut down the individual's ration of vitamin B,—by irritating the intestinal tract so that food is lost or avoided

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### MEDICINE AND THE SANITARIUM

Said Virgil—"Being myself no stranger to suffering, I have learned to relieve the sufferings of others"

In which we can see if we will, a point of tenderness, concern and sympathy for those in ill health Not that it is essential to fitness that a man must experience disease first himself before he may treat others effectively, but if he understands and grasps the feelings of the sufferer he is surely more suitable to care for others and to help them

Medicine, strangely, is a "business" in which the same efforts and facilities are used to "lose" patrons as well as to gain them. All its resources are devoted to achieving a goal where the patron no longer requires its services All its successes have their foundation on such efforts as tend to make its services dispensable

Except in the case of the invalid requiring care for the balance of life, the sanitarium is akin to Medicine in the

same respect To achieve and maintain success, it must be efficient in making its facilities useful to a patient for as short a space of time as may be necessary only to restore the ill to normal health and usefulness to society It is most successful in this generally because it is organized and equipped to give the individual attention so vital constantly, not only to assure complete recovery but to expedite it as well

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CENTRAL VALLEY, Orange County, N. Y.

# Medical News

## County News

### Albany County

Dr J Rosslyn Earp, aged 49, medical editor of the State Health Department, died on May 19 in Albany Hospital. Dr Earp was author of many scientific publications, was former public health director of New Mexico, and had been a member of the New York State Health Department since 1937.

### Chautauqua County

Two hundred persons attended a testimonial dinner held at Hotel Jamestown at Jamestown, May 16, in honor of Dr George W Cottis, who was chosen president-elect of the New York State Medical Society at the convention at Buffalo.

Dr D C Perkins, president of the Jamestown Medical Society, which sponsored the affair, presided and introduced Dr William D Johnson, of Batavia, past-president of the State Society and toastmaster at the dinner.

Present were members of the medical profession and their wives and western New York and Jamestown officials.

Dr W H Ross, of Brentwood, past-president and trustee of the State Society, said of Dr Cottis, as reported in the Jamestown Journal: "His mentality, his judgment, his honesty, his loyalty, and his other traits demonstrate his splendid character. No one has ever had any doubt of where he stands in relation to the problems of medicine."

In behalf of the laymen, S Miles Bouton said of Dr Cottis: "He is not only a great surgeon who, instead of keeping abreast of progress in his profession, keeps ahead of it. In the World War he demonstrated his patriotism and has been demonstrating it ever since. He is a scholar with the broadest intellectual interests, to whom all who come into contact with him listen with profit. He is a man of such high conception of civic duties that he gives too generously of his time and ability for the good of our city."

Greetings from his fellow sportsmen were extended by Murray T Davidson, who declared Dr Cottis was a great man of determination and the finest of associates on hunting and fishing trips.

A plaque, bearing the names of the members of the Jamestown Medical Society, was presented to Dr Cottis by Dr Frank P Goodwin.

The struggles of a boy who left school at the age of 10 to work for \$2.50 a week to help support the family and who eventually succeeded in obtaining a medical education was described by Dr Cottis in his response.

He continued: "All of us go through life over the road that is never straight or level for any long distance. We all go through the shadows in deep valleys and then rise to the summit where the sun is shining."

Dr Cottis in conclusion said: "It has been a joy to watch the development of the medical profession in this town, to see young men come along and give the service they do, to see the hospitals develop to what they are today, not only in size, but in equipment and efficiency, to see a great nursing profession develop, but above all to see the younger men come

along and develop as specialists. There were only two specialists here when I arrived and both were eye, ear, nose, and throat. Today, we have specialists in every branch, except neurology, and give as good service as can be found anywhere.

"The honor given me would be an empty one if it did not have the approval of my fellow colleagues in Chautauqua County. It seems to me tonight, to see all you folks here and to hear the words of my old and trusted friends, that the road has brought me to the summit of the mountain."

### Delaware County

A plan to standardize fees charged by physicians for treating relief clients was submitted to the Board of Supervisors at Delhi on May 12 and was referred to the public welfare committee.

The plan, presented and explained by Dr Orrin Q Flint, secretary of the county society and physician for the county home, hospital, and jail, is "designed to provide for relief clients adequate medical care, which implies the same care and attention any nonindigent family receives and to keep the bill for medical relief as low as is consistent with this good medical care."

Although services rendered in each instance are the same, there has been a difference in fees for care of home relief, county hospital, old age relief, and others of the myriad classifications of relief cases.

The suggested schedule of fees sets forth that "physicians feel that certain of the present fees are impractical in that they are lower for services and materials than the actual cost of materials, such as cost of lenses and frames in eye work, and in other instances too high, such as hospital visits at \$1.00 each though a doctor might see several patients in the hospital in 20 or 30 minutes."

To effect an equitable schedule, the present state compensation schedule of rates was taken as a model and an average reduction of 50 per cent made "to conform to the consensus among physicians that 50 per cent of the total gross cash income is net income."

It was explained that the remaining 50 per cent covers the cost of goods sold, in the case of a doctor including his services or time, his training, experience, expenses, including both original cost of education and current running expenses.

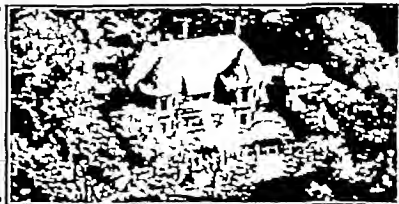
An advisory committee, to be appointed by the county society and composed of three physicians, one pharmacist, and one dentist, was suggested. The committee would act on disagreements referred to it. Dr Flint said that the mere existence of such a body would keep doctors from making improper charges for services. They would not care to run the risk of censure by their fellow physicians, he added.

If a local welfare officer refused to authorize treatment for a relief client and the physician felt that such treatment was necessary, he could appeal to the county welfare officer and the advisory committee.

[Continued on page 1308]

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## A PROBLEM IN TOURIST CAMPS

With some 35,000 tourist camps operating in the United States it is to be expected that new problems in health should arise

As many of these "overnight" arrangements for motorists are situated outside of city limits they are free of active city police and health department inspections. While it is true that a number of tourist camps are maintained by reputable people, these according to governmental reports are in a minority

Some years ago the American Automobile Association started listing Tourist Camps in their *Directory of Motor Courts and Cottages*. An effort to inspect such approved

camps was made, but inspections were undoubtedly made by persons untrained in hygiene and sanitation.

Economic conditions have created a large clientele for such establishments and in many states where there are numerous tourist attractions, the tourist camp has flourished without the strict health regulations that hotels in even villages are required to observe.

Today when travel within our country has increased for many reasons, these places will be patronized more than ever. Accordingly, now if ever, some effort should be made to effect safer and cleaner tourist camps for the protection of the public

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[Continued from page 1304]

The schedule provides for a \$2 00 fee for the first office visit and \$1 00 for each subsequent visit. Home visits, within a 3-mile radius, would be \$2 00, up to 6 miles, \$3 00, up to 10 miles, \$4 00, and \$1 00 extra for each additional 4 miles. Hospital visits would be 50 cents. After the first home visit 50 cents would be charged for each additional patient. Nearby night visits, between hours of 10 00 P M and 7 00 A M, would be \$3 00. In most instances the maximum to be charged for any one case would be \$50.

The schedules list suggested fees for every possible kind of treatment or operation. Dr Flint described the plan as "the doctors' effort to remedy chiseling."

#### Dutchess County

Dr Clement Schotland of the Beth Israel and New York Post-Graduate hospitals, New York City, spoke on May 14 at a meeting of the county society at the Amrita Club in Poughkeepsie on "Pseudo-Hypertrophic Muscular Dystrophy." Motion pictures were shown.

#### Essex County

Ending a three-year controversy, the County Board of Supervisors on May 27 approved the so-called welfare medical plan which provides more adequate care for the indigent and permits Buffalo private physicians to charge for their services, says the Buffalo *Courier-Express*.

The board vote on the measure was 46 to 2. It is expected the plan will become effective July 1. The estimated annual cost is \$66,000, of which 40 per cent will be reimbursed by the state.

The plan calls for private physicians to be paid \$2 00 a home call, with the maximum charge set at \$50 a month. It also provides for the employment of four medical social workers at \$1,500 annually, five physicians at \$1,500 to augment the home call service, four pharmacists at \$1,200, and an appropriation of \$6,000 for drugs.

The plan will enable hundreds of private physicians to obtain recompense for their services which heretofore they have given free to welfare clients.

#### Fulton County

Dr Frederick A. D. Alexander, director of anesthesia at the Albany City Hospital, was the principal speaker at a meeting of the county society on May 22 at the Hotel Johnstown. Dr Alexander spoke on "Complications of Anesthesia."

Following Dr Alexander's address, a luncheon was served in the coffee shop of the hotel. There were twenty-five members present.

#### Jefferson County

The postponed monthly meeting of the county society was held on May 15 at the Black River Valley Club. Dinner was served at 6 30.

Orthopedic aspects of arthritis were discussed by Dr Louis Goldstein of the Strong Memorial Hospital in Rochester.

A sound movie on vitamin B complex was also shown.

The June meeting of the society will be held at Pine Camp, and the members will be guests of the Army Medical Corps.

#### Kings County

Dr Ralph I. Lloyd, of Brooklyn, president-elect of the American Academy of Ophthalmology and Oto-Laryngology, was honored at the nineteenth annual dinner of the Brooklyn Ophthalmological Society in the Montauk Club, on May 21.

A past-president of the society, Dr Lloyd, who has practiced for more than forty years, is consulting ophthalmologist at Cumberland Hospital and consulting oculist at Prospect Heights Hospital and Peck Memorial Hospital. He is a fellow of the American College of Surgeons.

Dr Lloyd was presented with a portable radio by Dr Joseph E. Golding, first president of the society, who was toastmaster. Speakers included Dr Maurice L. Wieselther, president of the society, Dr Maurice J. Dattelbaum, president of the Kings County Medical Society, Dr Percy Fridenberg, founder of the Clinical Ophthalmology Society of New York, and Dr Algernon B. Reese, of Manhattan. Dr Walter V. Moore was chairman of the dinner committee.

#### Monroe County

The lives of 19 Rochester mothers were saved during the last year, the Maternal Welfare Committee of the county society reports.

The Rochester maternal death rate, it is reported, is one-half of what it was ten years ago and as low as any city of comparable size in the country. There were 19 less deaths in 1940 than in 1939.

Unless the birth rate rises, however, there will be in time an actual loss in population, the committee said, urging increases in those families which "can best provide their children with the advantages of life."

Doctors of Rochester and county towns have invitations from the County Welfare Department to participate in a "Rotating Panel System" of medical care for the indigent.

The system is designed to eliminate the direct-payment plan of welfare medical assistance and "to render adequate medical care at less cost."

Objections to the system are known to exist among physicians. In the letter explaining the system to the doctors, Jesse B. Hannan, county welfare director, and Dr Edward G. Whipple, medical director, who say a study of various programs throughout the country has been made, admit "none is wholly without objections on the part of both the physicians and the administrators of public welfare."

Nevertheless, Mr Hannan said that it is hoped to have the system in operation shortly. Many physicians already have offered to participate, he said.

The "Rotating Panel System" provides panels of four physicians in the city and of one to three physicians in each of nine rural districts, who would serve four months and then be replaced by new panels. City doctors would receive \$200 a month, town, \$50. Panels could be enlarged if necessary.

Under present arrangements some 350 physicians serve the county in the city alone. Unless the new system goes in effect, after June 1, on state orders, payment for medical care must be made to the welfare recipient, who in turn may, or may not, pass the money on to the physicians.

[Continued on page 1310]

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This so-called direct-payment plan is opposed. The county will continue to use the services of five full-time physicians under Civil Service appointment.

The regular meeting of the county society was held on Thursday evening, May 29, at the Academy of Medicine. Dr Samuel J Kopetzky, president of the State Society, spoke on "The Doctor's Place in the Defense Program." A business session preceded the meeting.

There were five candidates for membership: Dr Allen M Hill, Dr Richard B Phillips, Dr A J Tranella, Dr Exie Welsch, and Dr Philip Winslow.

#### New York County

The scientific program of the county society on May 26 included these addresses: (1) "Renal Extract in Hypertension," by Dr Benjamin Jablons, and (2) "Clinical and Experimental Hypertension," by Dr Frederick M Allen.

The Section of Obstetrics and Gynecology of the Academy of Medicine met on May 27, with the following program by the Woman's Hospital: (a) "Premature Separation of the Placenta," by Dr Ralph L Barret, (b) "Essential Mechanical Factors for Urinary Continence in Females," by Dr William T Kennedy, (c) "Roentgen Therapy for Acute Postpartum Mastitis," by Dr Harriet McIntosh, (d) "Erythroblastosis," by Dr Lyman Burnham, (e) "Results of Subcutaneous Implantation of Crystalline Estrogen and Progesterone," by Drs Daniel R Mishell and Leon R. Motyloff.

The following action has been taken by the county society to assure the sustained and effective treatment of patients of those physicians called to active military service. This provision makes the medical records of such patients available to other physicians under whose care they may come.

The call to active military duty of physicians now in practice has created a serious problem on the continuation of the treatment of patients now under their care. To meet this situation the county society has adopted the recommendation of its Committee on Medical Economics. This provision, of course, safeguards the confidential relationship between the patient and the physicians. The medical records will be made available to physicians only on instructions of the patient affected.

In pursuit of this action the county society has formulated the following standard communication which physicians might send to their patients:

"I have been called to active duty in the military forces of the U S. I have enjoyed

the privilege of attending you in the past and regret the necessity of terminating our association at this time. However, I shall resume the practice of medicine as soon as my term of active duty is completed. In the interim, if you will notify my office of the name and address of the physician whom you consult, a résumé of my record and suggestions for your treatment will be forwarded to this physician."

#### Queens County

The county society met on May 27, and listened to a paper on "The Treatment of the Premature Infant," by Dr Hugh Chaplin, pediatrician, Bellevue Hospital. Discussion was led by Dr Leona Baumgartner, acting director of Bureau of Child Hygiene, Department of Health, and Dr W C A Steffen, director of pediatrics, Flushing Hospital.

#### Rensselaer County

Colonel Louis H Bauer, M D, Fellow of the American College of Physicians and consultant in aviation medicine for the Civil Aeronautics Administration, spoke on "Aviation Medicine" at the meeting of the county society at The Hendrick Hudson on May 13.

#### Schoharie County

The county society held its May meeting at the Central School in Middleburgh. At the business session the following officers were nominated, the election to be held at the annual meeting in the fall: president, R G S Dougall, of Cobleskill, vice-president, L R Becker, of Cobleskill, treasurer, Duncan Best, of Middleburgh, secretary, Donald Lyons, of Middleburgh, censor, Joseph Duell, of Jefferson, and delegate to the State Society, David W Beard, of Cobleskill.

At the afternoon session papers were given by Dr James Greenough and Dr Leroy S House, of Oneonta, on tumor clinics and by Dr William P Brown of the Health Service Bureau of the State Education Department on "The School Physician." Dr David W Beard, president for the past two years, presided.

#### Sullivan County

Dr Ralph S Breakey, of Monticello, was scheduled for the presidency of the county society, and Dr Cornelius Duggan, of White Lake, was honored for 50 years in the practice of medicine, at the semi-annual meeting, attended by forty physicians, on May 21 at the Lenape.

At least three other physicians in the county have also begun the second half of a century of practice. They are Dr John A Miller, of Roscoe, 53 years, Dr Russell W Allan (dentist), of Monticello, 51 years, and Dr Rosetta S Hall, of Liberty, 52 years.

### Deaths of New York State Physicians

Name	Age	Medical College	Date of Death	Residence
Harry S Brame	68	P & S Baltimore	April 23	Homer
Vincent A. Egan	43	L I C Hospital	May 14	Far Rockaway
John R. Earp	49	London	May 19	Delmar
Gertrude Greenstein	54	N Y M C & H Wom	May 14	Manhattan
Matthias Nicoll, Jr	73	P & S N Y	May 13	Rye
Robert M Rogers	57	L I C Hospital	May 13	Brooklyn & Quogue
Doran J Stephens	38	Rochester	March 19	Rochester

